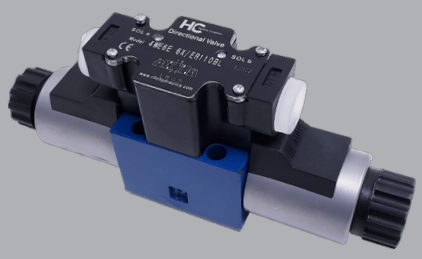
DIRECTIONAL
CONTROL VALVES



HC Hydro Custom

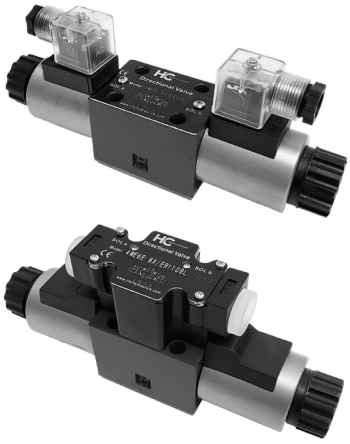
- SOLENOID OPERATED VALVES
- MODULAR VALVES

2023 CATALOG

TABLE OF CONTENT

[Product Features]

1.Direct-acting solenoid operational direction valve as standard type.
2.Installation area by DIN24 340 type A
3.DC or AC wet-type solenoid that can be arbitrary rotation and with detachable coil.
4.Coil can be replaced without oil.
5.Equipped with manual emergency operation push rod.



【Model Code】

4	WE	6	E	6X		E	D24		L			L

3channel=3
4channel=4

Solenoid Operated Directional Valves

Drift diameter：
3=3diameter

Function Symbol：

60~69 series =6X
（60~69：installation and linking size remains the same）

O=no spring-return
OF=no spring-return，with positioning
Spring return unmarked

Solenoid thread linkage：=E

D12 D24=DC12V 24V
A110 A220=RC110V/50Hz 220V/50Hz
R110 R220=RAC110V 220V

No marks = manual override
NP = with self-locking manual emergency push rod

H: DIN43650 plug
L: DIN43650 plug (with light)
F: DEUTSCH, protection class IP69K/Deutsch
A: AMP plug, protection class IP66/AMP Junior-Timer
D: Double leads
B: Terminal box

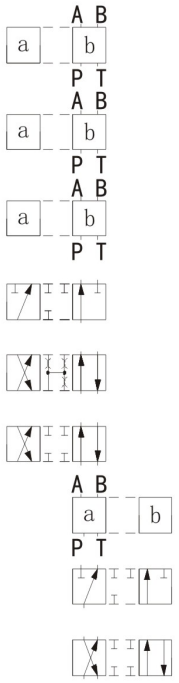
No marks = no cartridge choke
B08=orifice Φ0.8mm (0.031")
B12=orifice Φ1.0mm (0.04")
B12=orifice Φ1.2mm (0.047")

Nitrile rubber seal = no mark
V=Fluorine rubber sealing ring

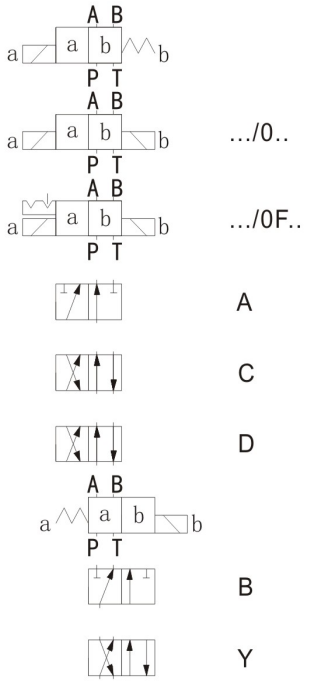
The valve body coating
H：black
L：blue

【SPOOL SYMBOLS】

TRANSITION SPOOL

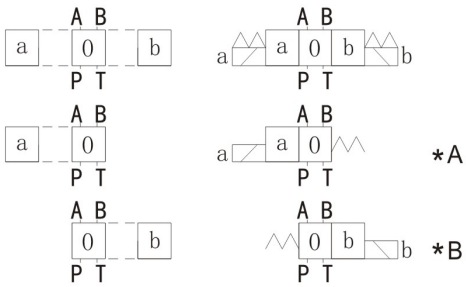


SLIDE VALVE SPOOL

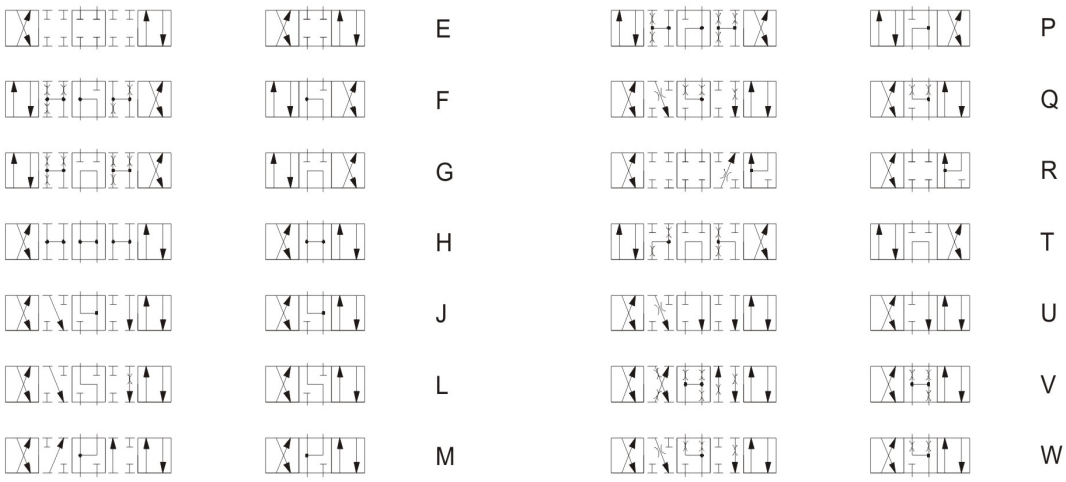


transition spool

slide valve spool



☆ Spool symbol with core a or b then code should be XA or XB
For example : spool E with core position a , then code should be EA



【Technical Data】

General data

Mounting position		optional
Operating temperature		-30~+50℃（nitrile rubber seal）(-22 + 122°F)
		-20~+50℃（rubber seal）(-4 + 122°F)
weight	Single solenoid valve	1.45 kg (3.20 lbs)
	Double solenoid valve	1.95 kg (4.29 lbs)

Hydraulic Data

Maximum operating voltage fluid port P、A、B		31.5 MPa (4568 PSI)
Hydraulic fluid port		21 (MPa DC) : 16 (MPa AC) (3045 PSI DC) (2320 PSI AC) When working pressure exceeds the allowable pressure, valves with the sign bit A,B must use T as oil drain port
Maximum flow rate		80 l/min (DC) / (21.12 Gallon DC) ; 60 l/min (AC) / (15.84 Gallon AC)
Flux areas （when in the median）	Type Q	About 6% of the nominal cross-sectional area mm² inch²
	Type W	About 6% of the nominal cross-sectional area mm² inch²
Hydraulic oil 1、suitable for nitrile rubber and fluoro rubber seal 2、Fluoro seal only		Mineral oil（HL,HLP) by DIN51 524 Rapid biological solution oil by VDMA24 568 HETG 1）; HEPG 2）;HEES 3）
The oil temperature range		-30~+80℃（nitrile rubber seal）(-22 + 176°F) -20~+80℃（rubber seal）(-4 + 176°F)
Viscosity range		2.8–500 mm²/s (0.003 inch²/s - 0.775 inch²/s)
Oil cleanliness		The highest oil pollution level by NASI1639 Class 9 recommend minimum filter filtration precision β10≧75

Electric data

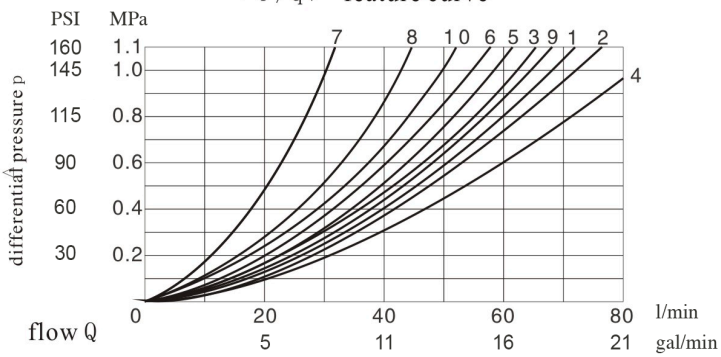
Voltage category	DC	AC(50HZ)
Supply voltage	12, 24, 48, 110, 220 V	110 220 V
Allowable voltage tolerance	+10~–15 %	+10~–15 %
Power consumption	30 W	– W
Holding current	– A	0.27(220V) A
Starting current	– A	0.72(220V) A
Working system	100 ED%	100 ED%
Reversing time	125~145 ms	10~20 ms
Resetting time	100~250 ms	15~40 ms
Switching time	≤15000 times/h	≤7200 times/h
Protection class by DIN 40050	IP65(AMP：IP66)	(Deutsch:IP69k)
Maximum coil temperature	135℃ (Class B) (275°F)	180℃(Class H) (356°F)

NOTICE：1）Grounding according to the provision when connecting electricity to protect wires.
2) The reversing time of RAC is close to DC , but the resetting time is longer and random.

【feature curve】

（testing result on basis of that when υ =41mm/s & t=50℃）

△P/qv—feature curve



Curve 7 : spool type"R"is in switch position A→B

Curve 8 : spool type"G"and "T" are in median position P→T

Curve 9 : spool type"H"is in median position P→T

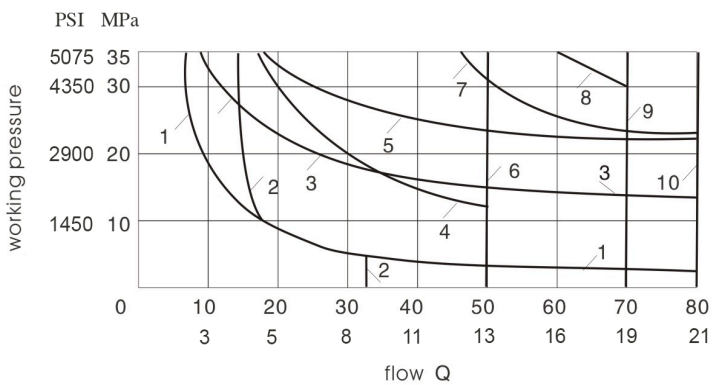
spool symbol	flow direction			
	P–A	P–B	A–T	B–T
A,B	3	3	–	–
C	1	1	3	1
D,Y	5	5	3	3
E	3	3	1	1
F	1	3	1	1
T	10	10	9	9
H	2	4	2	2
J,Q	1	1	2	1
L	3	3	4	9
M	2	4	3	3
P	3	1	1	1
R	5	5	4	–
V	1	2	1	1
W	1	1	2	2
U	3	3	9	4
G	6	6	9	9

【switching performance limit】

（testing result on basis of using HLP46, t=50℃）

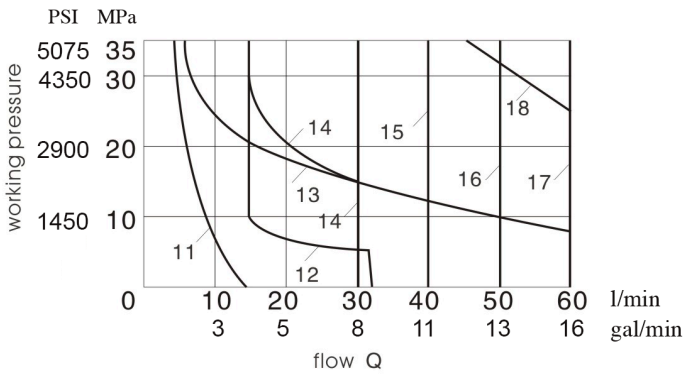
1.The working limit can be used for both the two flow direction (For example: Flow return from B to T, at the same time, flow from P to A)
2.Power limit tested when solenoid is at working temperature, under voltage 10%, and port T have no back pressure.
3.When unidirectional flow（if it was clogged from P to A, B port）, due to the fluid power in the valve, the allowed switching limit may drop.

DC solenoid		AC solenoid-50Hz		AC solenoid-60Hz	
curve	symbol	curve	symbol	curve	symbol
1	A,B	11	A,B	19	A,B
2	V	12	V	20	V
3	A,B	13	A,B	21	A,B
4	F,P	14	F,P	22	F,P
5	J	15	G,T	23	G,T
6	G,H,T	16	H	24	J,L,U
7	A/O,A/OF,L,U	17	A/O,A/OF,C/O	25	A/O,A/OF,Q,W
8	C,D,Y		C/OFD/O,/D/OF,	26	C,D,Y
9	M		E,J,LM	27	H
10	E,R,C/O,C/OF		Q,R2,U,W	28	C/O,C/OF,D/C,
	D/O,D/OF,Q,W	18	C,D,Y		D/OF,E,M,R2



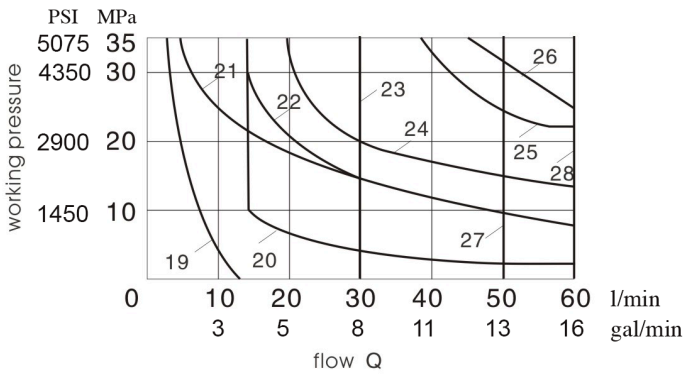
Notice：1）with emergency operation
2）flow from actuator components back to tank

DC solenoid	
feature curve	solenoid voltage
1~10	12, 24, 48, 96, 110



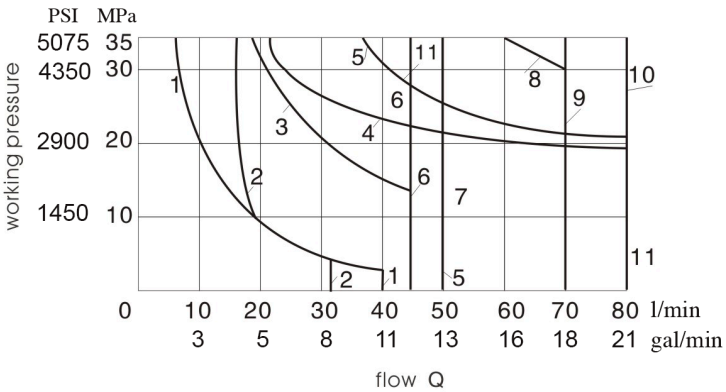
AC solenoid

feature curve	power source voltage	
11~18	AC110	110V,50Hz
	AC220	220V,50Hz



AC solenoid

feature curve	power source voltage	
19~28	AC110	110V,50Hz
	AC220	220V,50Hz



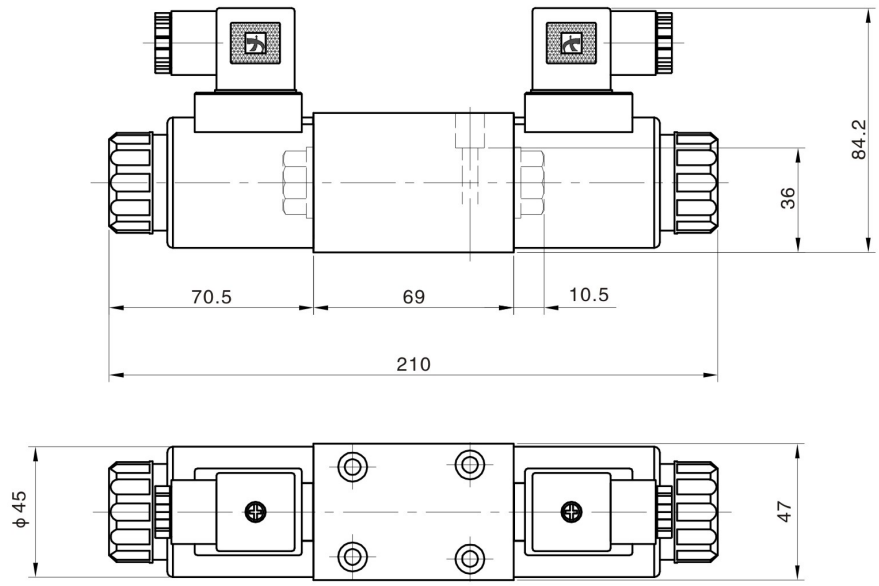
DC solenoid

feature curve	power source voltage
1~10	DC110V

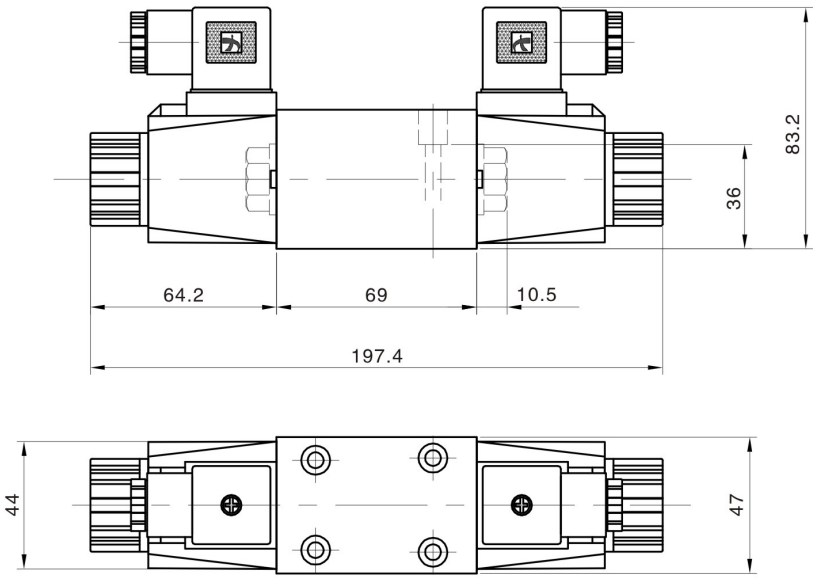
curve	symbol
1	A、B
2	V
3	F、P
4	J、L、U
5	G
6	T
7	H
8	C、D
9	M
10	E、R、C/O、C/OF、D/O、D/OF、Q、W、E1
11	A/O、A/OF
12	E

【drawing of installation dimension】

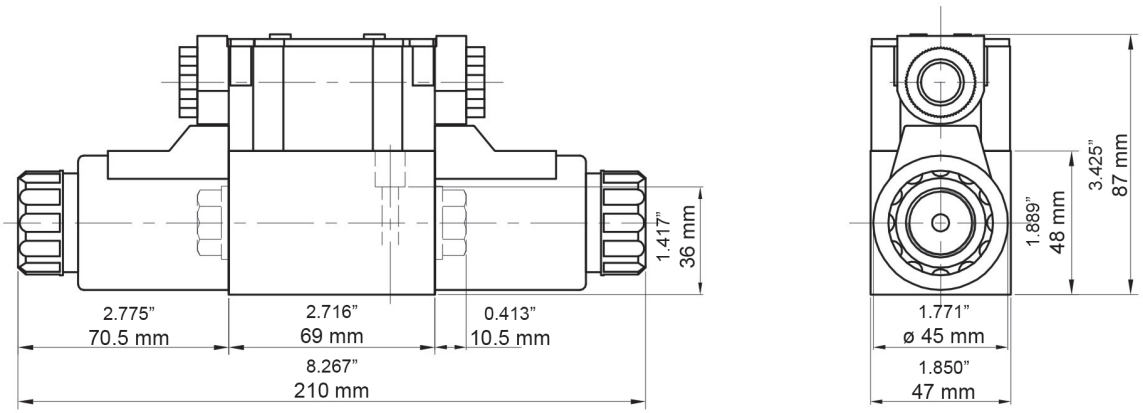
4WE6–DC–H



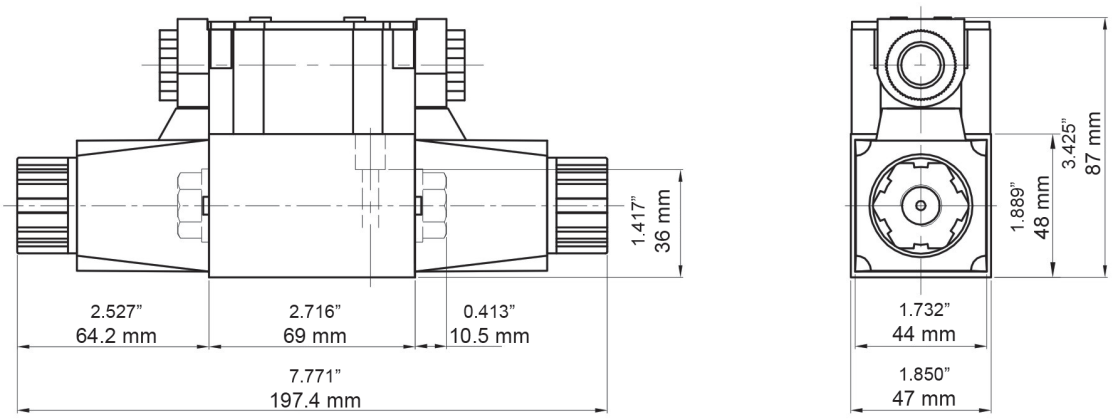
4WE6–AC–H

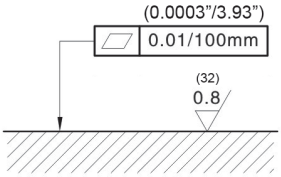


4WE6 E–D24–B

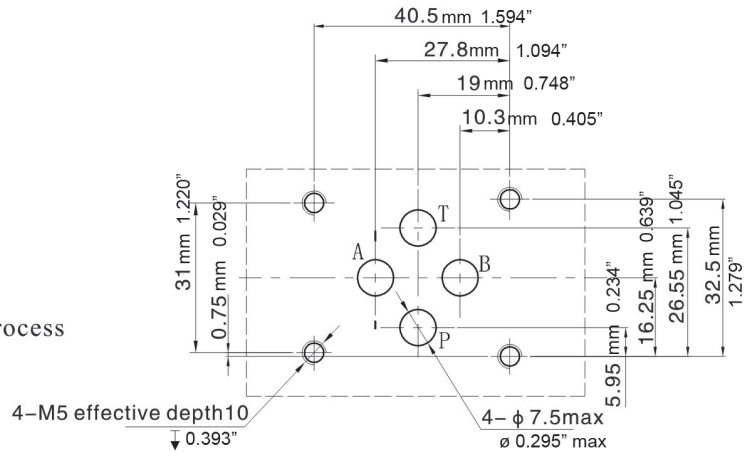


4WE6 E–A220–B



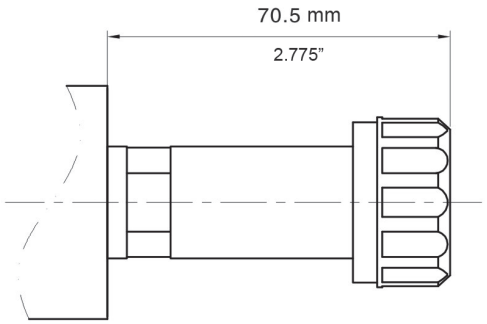


the surface of mating parts request precision process

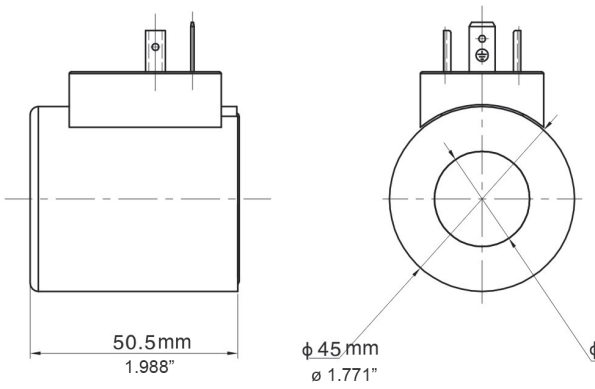


【option of electronic connector】

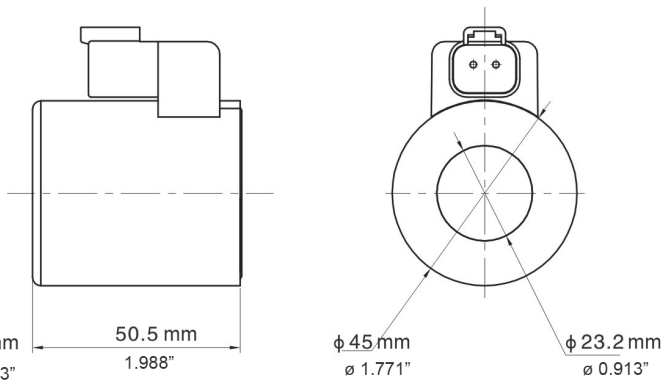
Without coil, fastening the tube and locknut on the homologous valve body, according to the different IP grade, then choose the coil with homologous structure.



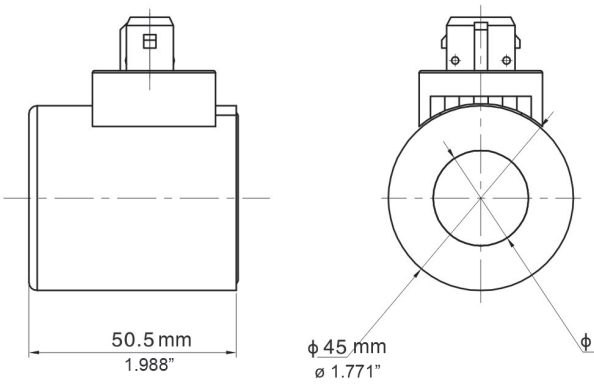
Coil with connector meets
DIN43650EN175301-803 ISO4400



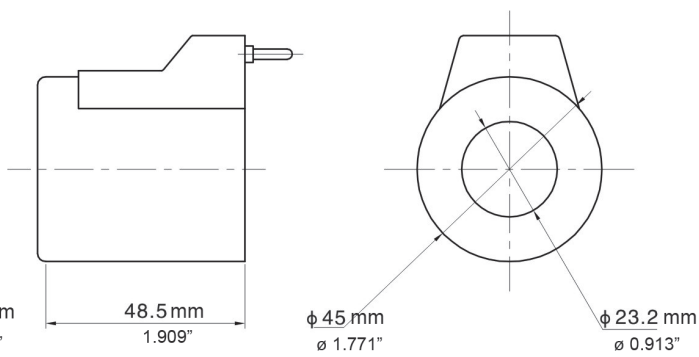
Coil with connector AMP, the IP grade of coil house is IP67



coil with connector
DEUTSCH DT04-2P, the IP grade of coil house is IP-69K



apply to pin type coil with connection type B



【Product Features】

1.Direct-acting solenoid operational direction valve as standard type.
2.Installation area by DIN24 340 type A and CETOP-RP 121H
3.DC or AC wet-type solenoid that can be arbitrary rotation and with detachable coil.
4.Coil can be replaced without oil.
5.Equipped with manual emergency operation push rod.

【Model Code】

4	WE	10	E	3X		C	D24		L			L

3channel=3
4channel=4

Solenoid operated directional valves

Drift diameter：
10=10 diameter

Code Symbol：

30~39 series =3X
（30~39：installation and linkage Size remain the same）

O=no spring-return
OF=no spring-return，with positioning
No marks=Spring-return

Solenoid thread linkage：=C

D12 D24=DC 12V 24V
A110 A220=AC 110V/50Hz 220V/50Hz
R110 R220=RAC 110V 220V

No marks = manual override
NP = With self-locking manual emergency put rod

H: DIN43650 plug L:DIN43650 plug（with lamp）
F: DEUTSCH，protection class IP69K/Deutsch
A: AMP，protection class IP66/AMP Junior-Timer
D: double lines
B: terminal box

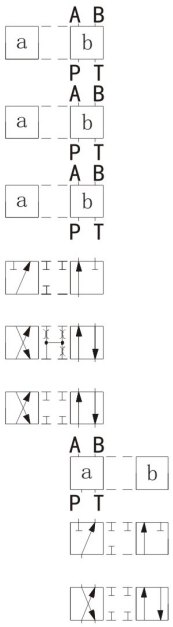
No marks=no cartridge choke
B12=orifice Φ1. 0mm ø 0.039"
B08=orifice Φ0. 8mm ø 0.031"
B12=orifice Φ1. 2mm ø 0.047"

Nitrile butadiene rubber seal=no marks
V=viton seal

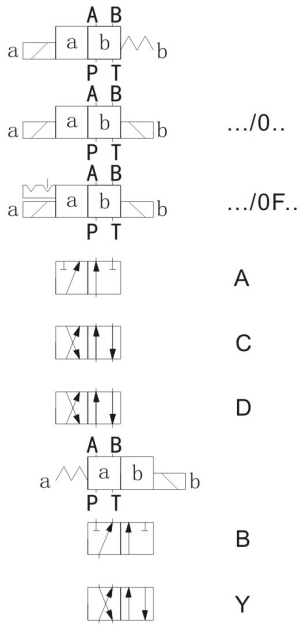
The coating of the valve body H：black L：blue

【spool symbol】

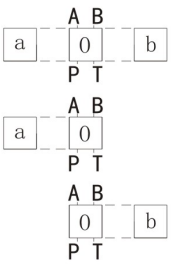
TRANSITION SPOOL



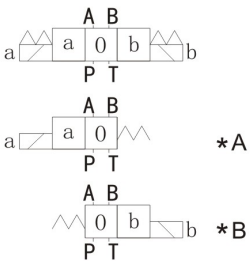
SLIDE VALVE SPOOL



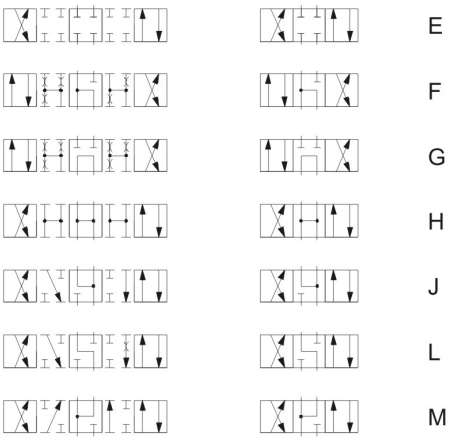
TRANSITION SPOOL

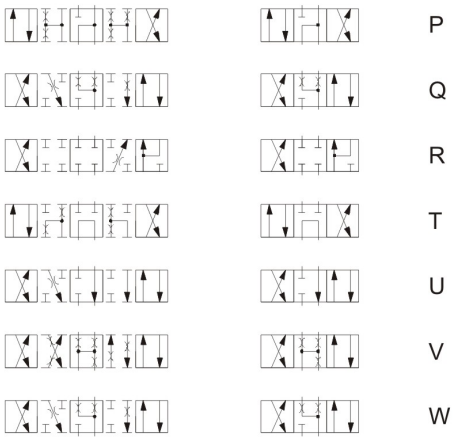


SLIDE VALVE SPOOL



☆ spool symbol with core a or b then code should be XA or XB
for example: spool E with core posifion a ,then code should be EA





【Technical Data】

General data

	Mounting position	anywhere
	Operating temperature	−30~+50℃ (nitrile rubber seal) (-22 + 122°F)
		−20~+50℃ (fluorous rubber seal) (-4 + 122°F)
weight	Single solenoid valve	4.3 kg (DC) ； 3.5 kg (AC) (9.48 lbs DC) ; (7.71 lbs AC)
	Double solenoid valve	6.0 kg (DC) ； 4.9 kg (AC) (13.22 lbs DC) ; (10.8 lbs AC)

Hydraulic Data

Maximum operating voltage	fluid port P、A、B	31.5 MPa (4568 PSI)
Hydraulic fluid port	T	21 (MPa DC) : 16 (MPa AC) (3045 PSI DC) : (2320 PSI AC) When working pressure exceeds the allowable pressure, valves with the sign bit A,B must use T as oil drain port
Maximum flow rate		120 l/min (32 Gallon/min)
Flux areas （when in the median）	Type Q	11 (A/B→T) ； 10.3 (P→A/B) mm^2 (0.0017 $inch^2$)
	Type W	2.5(A/B→T) mm^2 (0.0038 $inch^2$)
	Type Q	2.5(A/B→T) mm^2 (0.0038 $inch^2$)
Hydraulic oil 1、suitable for nitrile rubber and fluoro rubber seal		Mineral oil （HL,HLP) by DIN51 524 Rapid biological solution oil by VDMA24 568
Fluoro seal only		HETG 1）； HEPG 2）;HEES 3）
The oil temperature range		−30~+80 ℃ (nitrile rubber seal) (-22 + -176°F)
		−20~+80 ℃ (rubber seal) (-4 + -176°F)
Viscosity range		2.8−500 mm^2/s (0.004 $inch^2/s$ - 0.775 $inch^2/s$)
Oil cleanliness	SQ. IN.	The highest oil pollution level by NASI1639 Class 9 recommend minimum filter filtration precision β10≧75

Electric data

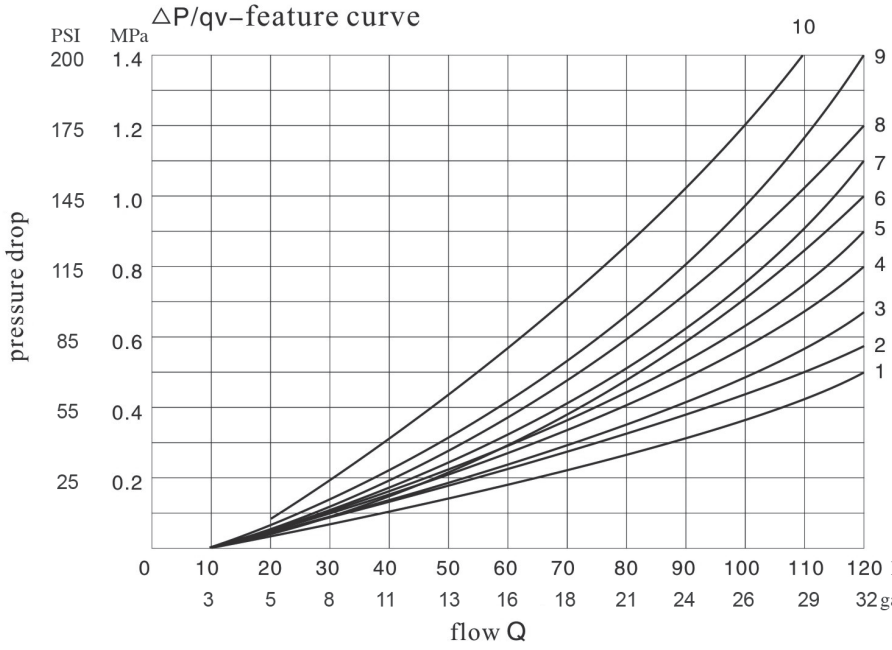
Voltage category	DC	AC(50HZ)
Supply voltage	12, 24, 48, 96, 110, 220V	110, 220 V
Allowable voltage tolerance	+10~−15 %	
Power consumption	36 W	−
Holding current	−	0.42(220V) A
Starting current	−	1.40(220V) A
Working system	100 ED%	
Reversing time	145~160 ms	15~25 ms
Resetting time	120~130 ms	20~30 ms
Switching time	≤15000 times/h	≤7200 times/h
Protection class by DIN 40050	IP65(AMP：IP66)	Deutsch:IP69k
Maximum coil temperature	135℃ (class B) (275°F)	180℃ (class H) (356°F)

NOTICE： 1） The reversing time of RAC is close to DC , but the resetting time is longer and random.

【feature curve】

（testing result on basis of using HLP46, t=40℃）

△P/qv–feature curve



symbol	flow direction			
	P→A	P→B	A→T	B→T
A,B	3	3	–	–
C	3	3	4	5
D,Y	5	5	6	6
E	1	1	4	4
F	2	3	7	4
G	3	3	6	7
H	1	1	6	7
J	1	1	3	3
L	2	2	3	5
M	1	1	4	5
P	4	2	5	7
Q	1	2	1	3
R	3	6	4	–
T	3	3	6	7
U,V	2	2	3	3
W	2	3	4	5
on-position	P→A	P→B	A→T	B→T
R	–	9	–	–

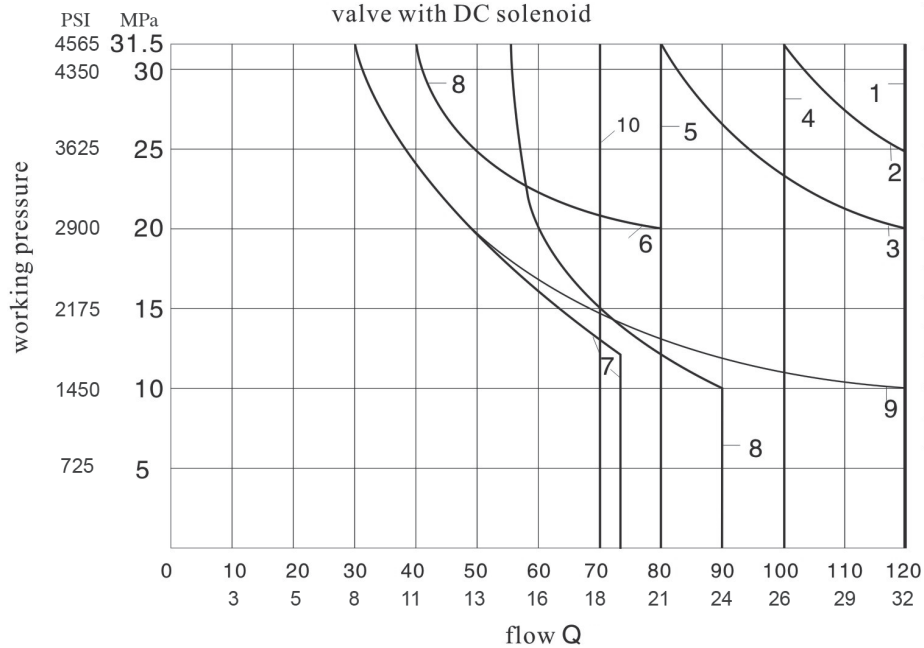
on-position	P→A	P→B	B→T	A→T	P→T
F	4	–	–	9	9
P	–	5	8	–	10
G,T			–	–	9
H			–	–	3

【power limit】

（testing result on basis of using HLP46, t=40℃）

1.The working limit can be used for both the two flow direction
(For example: Flow return from B to T, at the same time, flow from P to A)
2.Power limit tested when solenoid is at working temperature, under voltage 10%, and port T have no back pressure.
3.When unidirectional flow（if flow from P to A, port B closed）, due to the fluid power in the valve, the allowed reverse power limit will drop obviously .

valve with DC solenoid

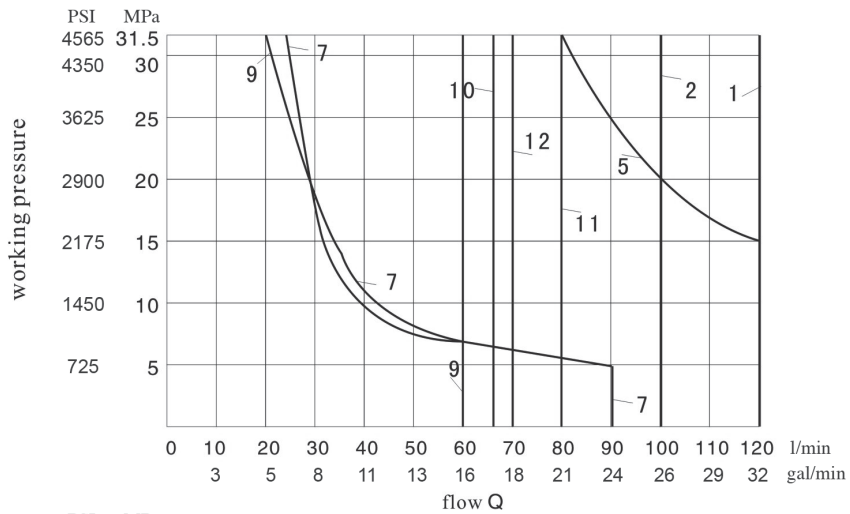


feature curve	symbol
1	C, C/O, C/OF D, D/O, D/OF Y,M
2	E
3	A/O, A/OF L, U, J, Q, W
4	H
51)	R, L2) ,U2)
6	G
7	T
8	F, P
9	A, B
10	V

Notice：1) the flow of oil return (have no relation with area ratio)
2) Be only applied to the condition that spool is in the median position

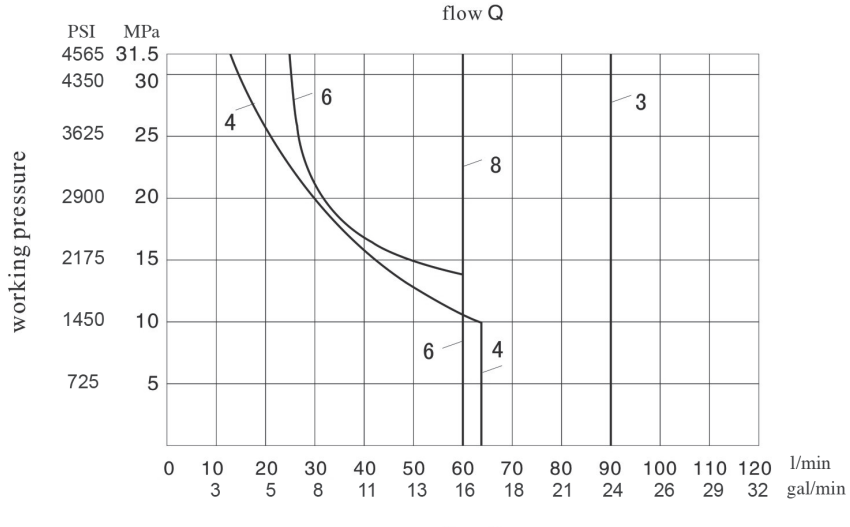
【power limit】

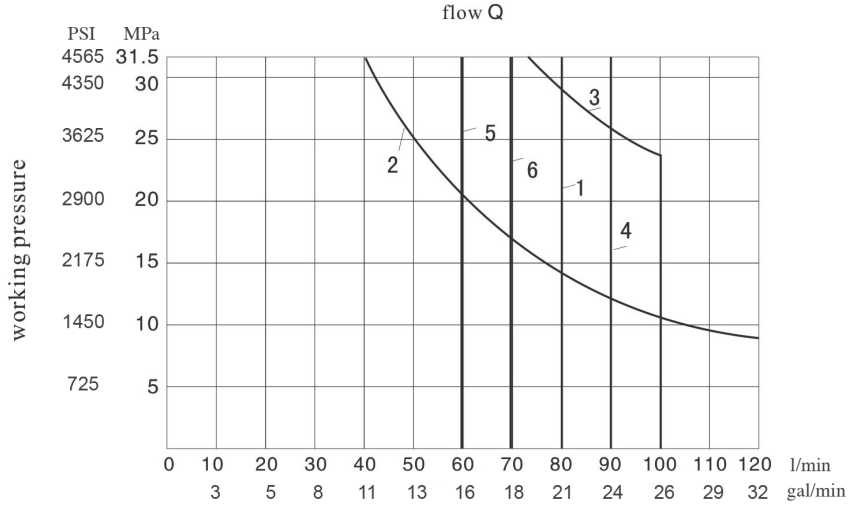
（testing result on basis of using HLP46, t=40℃）



feature curve	spool symbol
1	C, C/O, C/OF D, D/O, D/OF Y
2	E,L,U,Q,W
3	M
4	A, B
5	A/O, A/OF,J
6	G
7	F, P
8	V
9	T
10	H
11	R
121)	L ,U

Be only applied to the condition that spool is in the median position



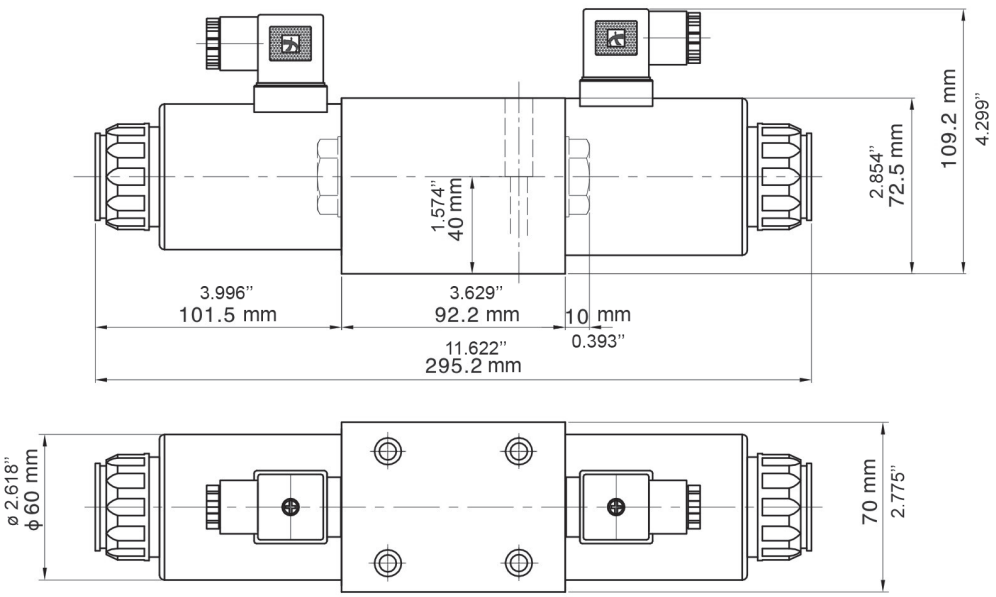


feature curve	spool symbol
1	C, C/O, C/OF D, D/O, D/OF Y
2	A/O, A/OF
3	E
4	M
5	V
6	H

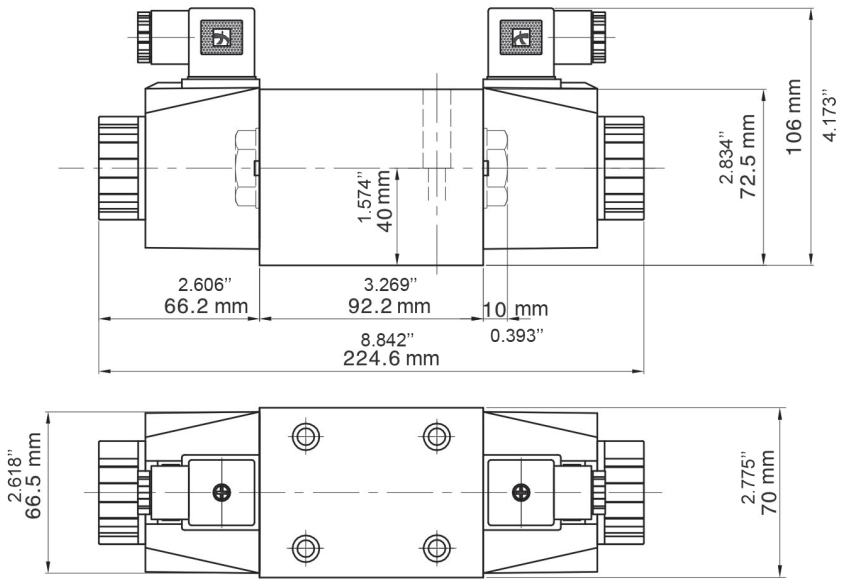
110V,60Hz
220V,60Hz

【drawing of installation dimension】

4WE10–DC–H

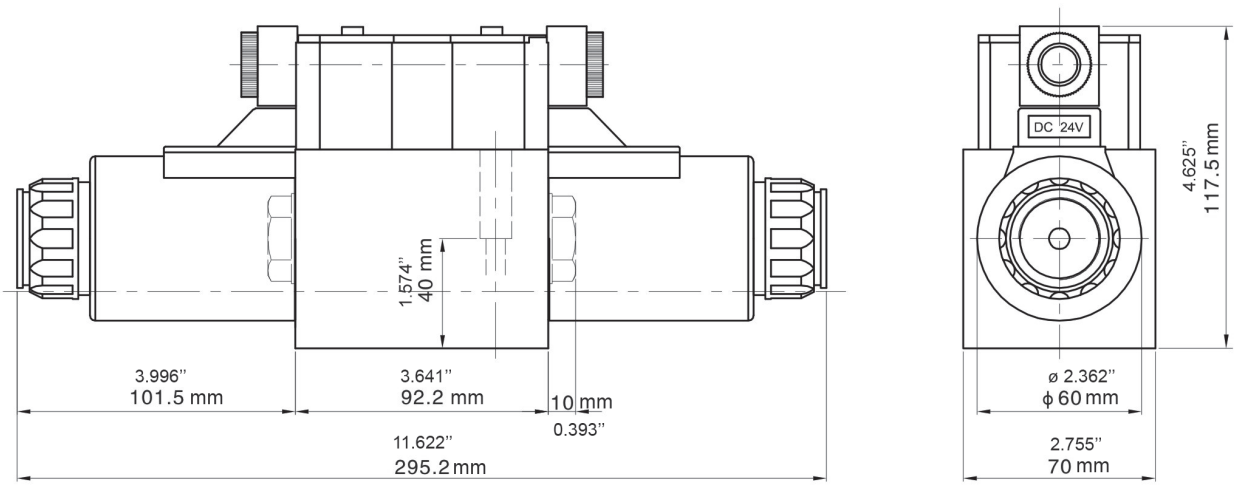


4WE10–AC–H

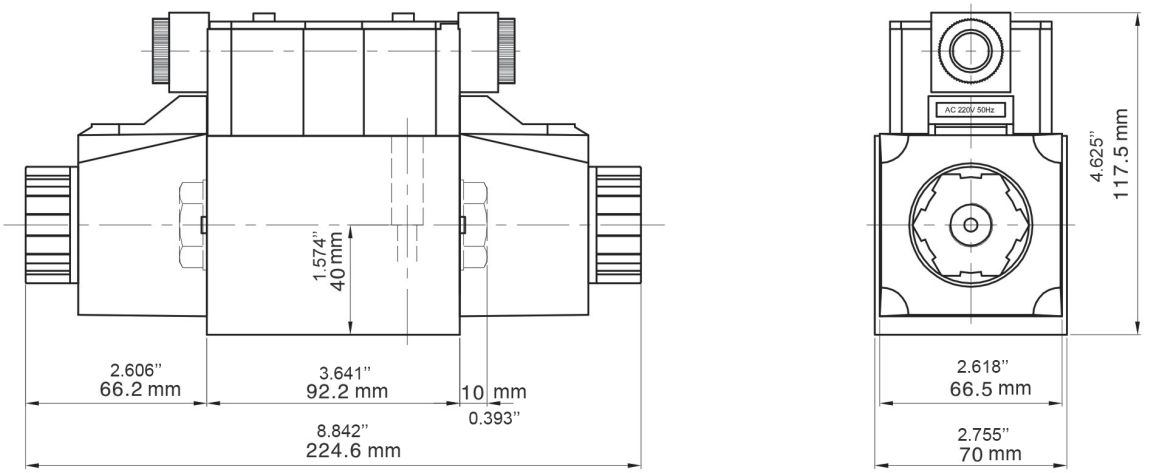


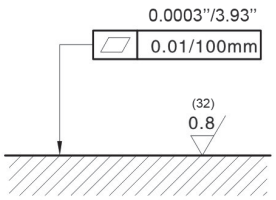
【drawing of installation dimension】

4WE10–DC–B

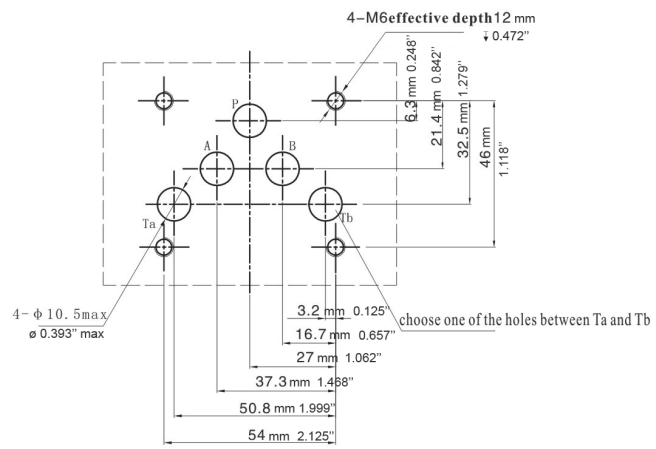


4WE10–AC–B



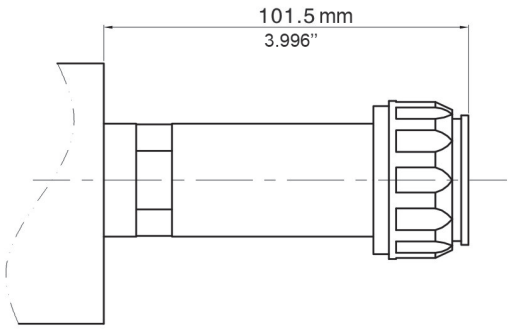


the surface of mating parts request precision process

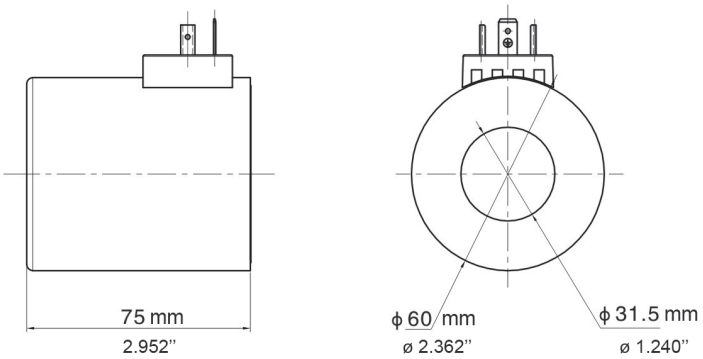


【option of electronic connector】

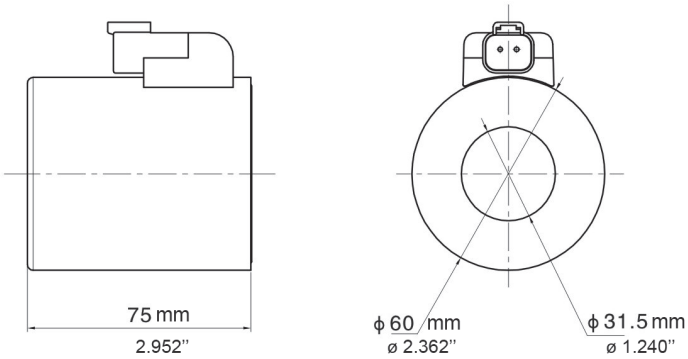
Without coil, fastening the tube and locknut on the homologous valve body, according to the different IP grade, then choose the coil with homologous structure.



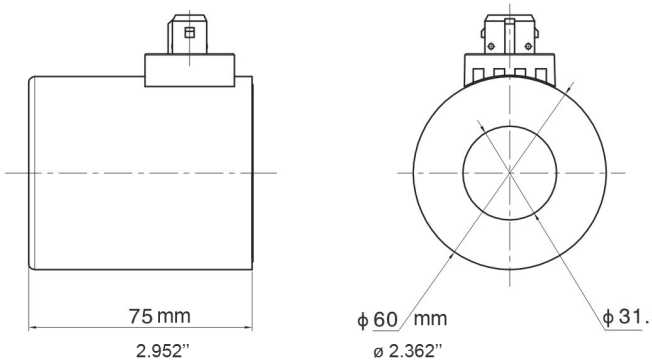
Coil with connector meets
DIN43650EN175301-803 ISO4400



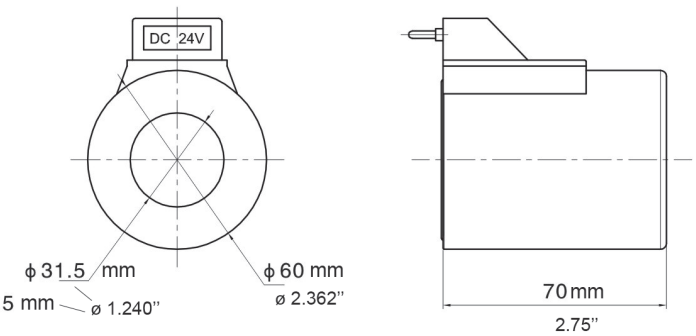
Coil with connector AMP, the IP grade of coil house is IP67



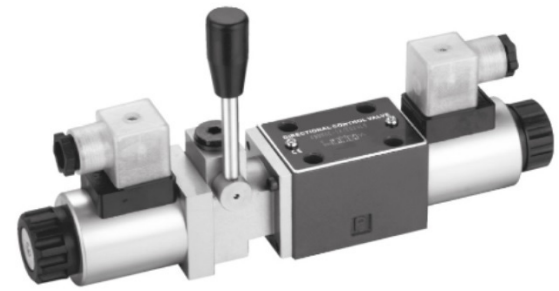
coil with connector
DEUTSCH DT04-2P, the IP grade of coil house is IP-69K



apply to pin type coil with connection type B



【Product Features】



1.This kind of valve can also be operated with auxiliary handler in the case of losing electricity.
2.Two different kinds of model code are needed according to the requirements of installation.
3.The auxiliary handler should in the original position
4.When the valve is operated by electricity, and the handler does not effect any performance of the valve.
5.Can be used as pilot valve of electroohydraulic operated directional valves.

【Model Code】

*	WMME	6	*	1X	E	*	*	*	*	*

3channel=3
4channel=4

Solenoid operated directional valves with manual lever control

6=NG6
10=NG10

code symbol of silde valve

Serial number =1X
10–19 series mounting and linking size remain the same

Solenoid thread linkage

DC 24V =24
RAC 220V R=220

No marks = place the handler vertically
（in the vertical state with valve axis）
MO = place the handler horizontally
（parallel to the valve axis ）

No code = NBR seals
V= FKM seals

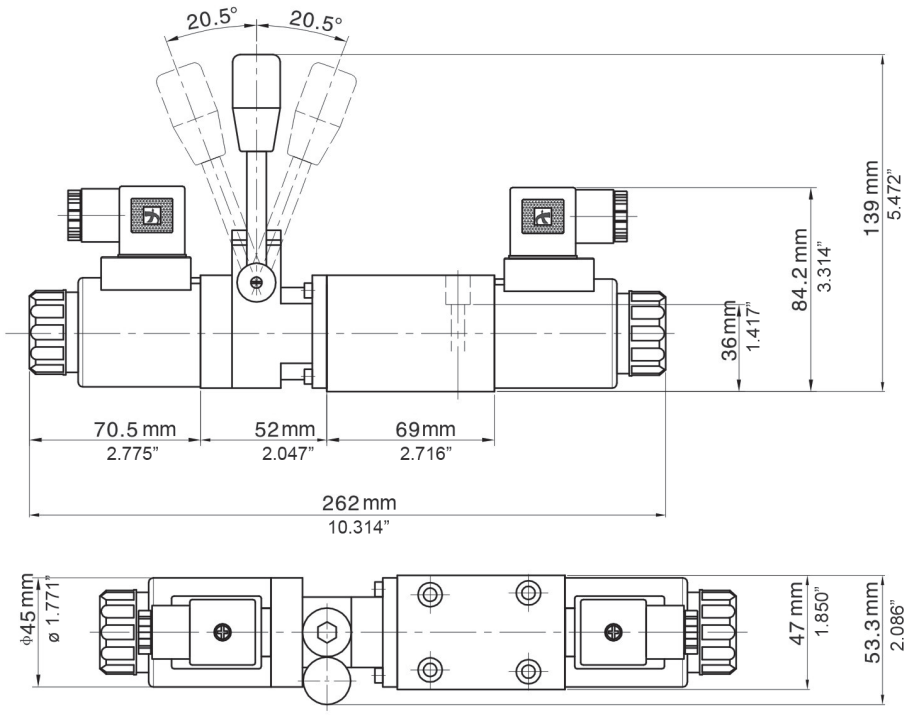
No marks=no cartridge choke
B08=orifice diameter=0.8mm 0.031”
B10=orifice diameter=1.0mm 0.039”
B12=orifice diameter=1.2mm 0.047”
B15=orifice diameter=1.5mm 0.059”
B20=orifice diameter=2.0mm 0.078”
B25=orifice diameter=2.5mm 0.098”
B30=orifice diameter=3.0mm 0.118”

Plug category：
Z:DIN43560 plug
L：DIN43560 plug（with lamp）
D:Deutsch plug
A:AMP plug
F:wire leads
B：terminal box

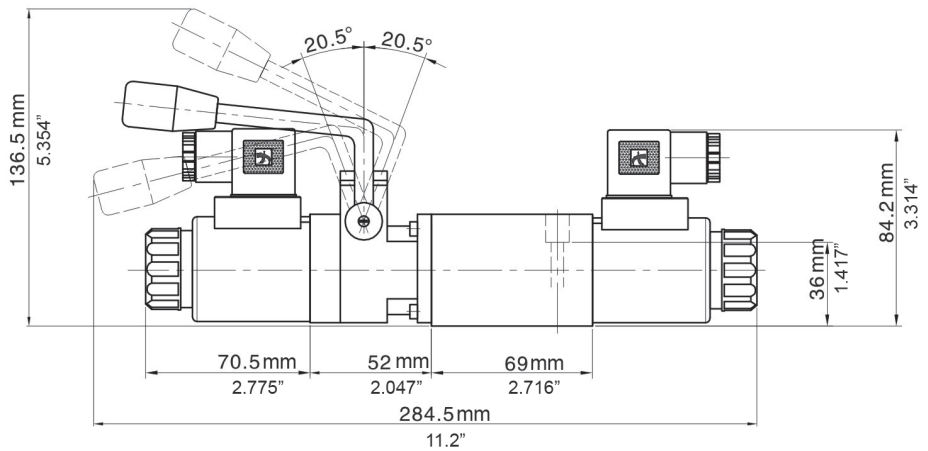
Notice：the code symbol of slide valve
Two–way valve：refer to 4WE6 two–way spring–return valveThree–way valve：refer to 4WE6 three–way spring–return valve
Emergency handler can be mounted in A and B cavity(add A or B after code symbol)
Eg：EA E slide valve's functional handler is in the three–way valve's cavity EB E slide valve's functional handler is in the three–way valve's cavity
Technical parameters：refer to WE6–6X series solenoid operated directional valves Performance characteristics：refer to WE6–6X series solenoid operated directional valves

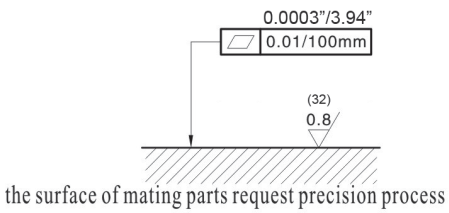
【drawing of installation dimension】

4WMME6

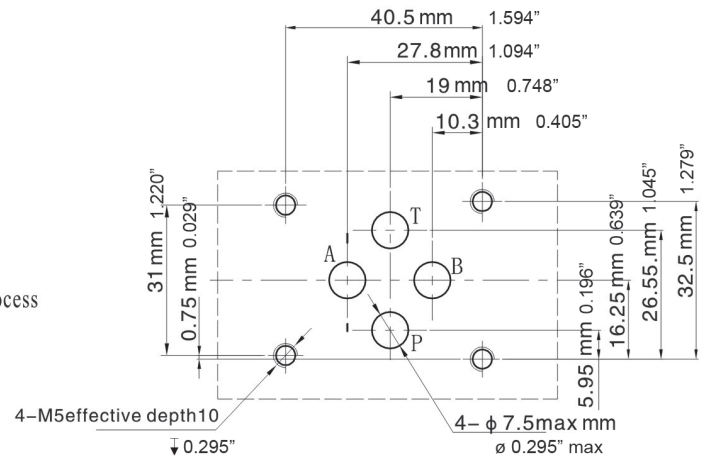


4WMME6–MO

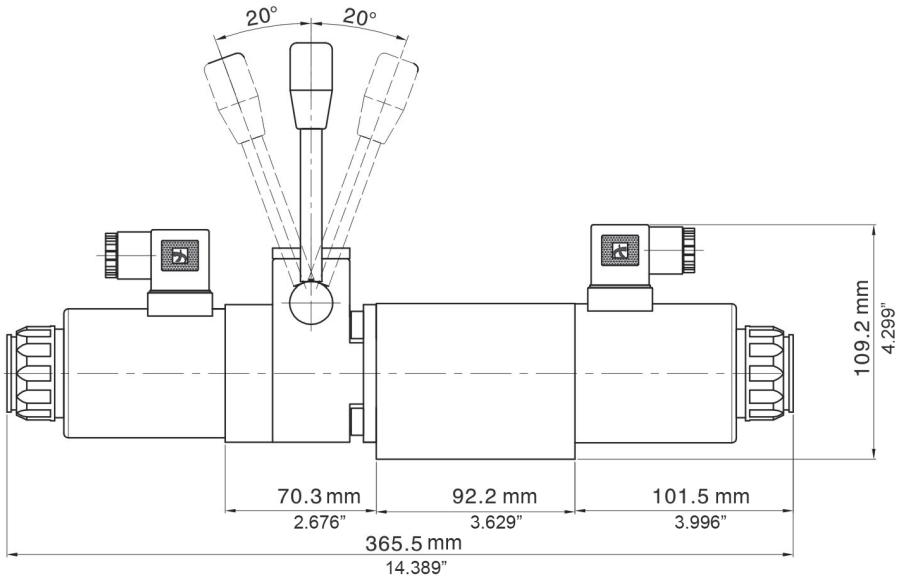


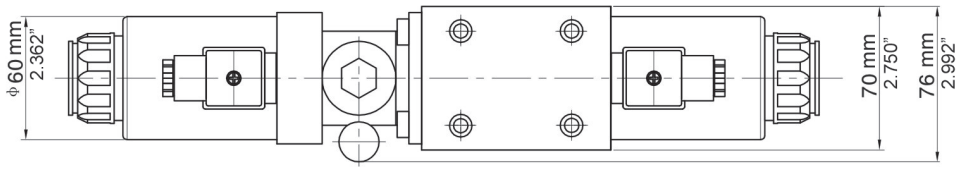


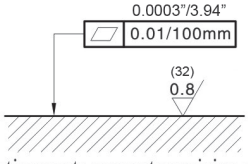
the surface of mating parts request precision process



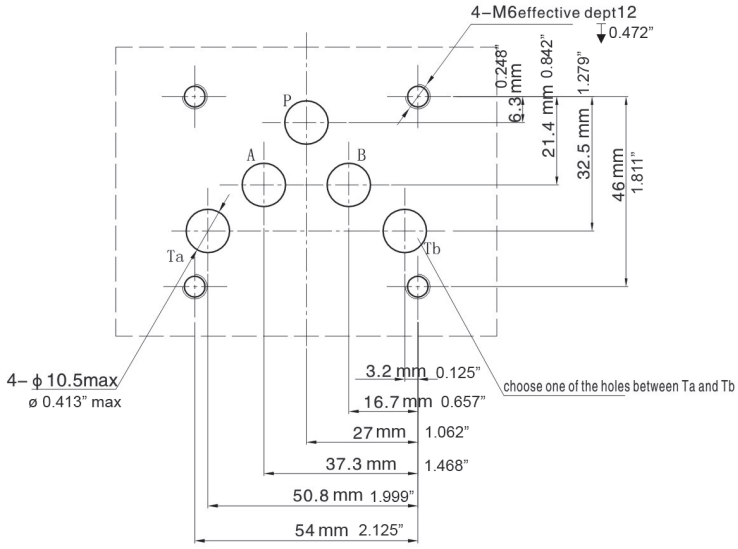
4WMME10



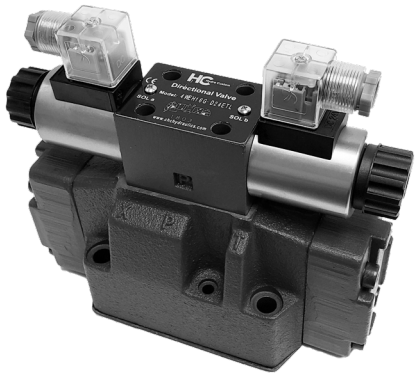




the surface of mating parts request precision process



[Product Features]



1. WEH series electroohydraulic operated directional valves is controlled by solenoid valve as pilot, using plate connection and its size meets DIN2430 and SO4401.It has many different properties and additional devices are available.
2. Solenoid valve, used as pilot control, has wet-type DC or AC series.; the main valve adopts spring centralizing and spring-return, hydraulic centralizing and resetting; with or without reversing time regulator; with or without the main valve stroke regulator; pre-pressure valve can be mounted in the main valve; cartridge damper can be mounted; pressure reducing valve can be mounted when operating pressure over 25Pa.

[Model Code]

	4WEH	10		E	6X		6A	D24				L					

Operating pressure
28MPa 4061 PSI =no marks
35MPa =H
5076 PSI

Drift diameter:
10=10 size
16=16 size
25=25 size
32=32 size

The main valve spring-return or centralizing=no marks
The main valve hydraulic-return or centralizing=H
(10 size two-position only)

Refer to the figure of code symbol of the slide valve

60-69=6X series

When pilot valve is two-position valve with two solenoid, The main valve serves as pilot valve when it is hydraulic resetting,
no spring reset=0No spring reset, with locator=OF
("H"must be noted befoe function
0 or OF DO NOT suitable for function Y)

Pilot valve
Standard solenoid valve =6A
High performance solenoid valve =6E

D12 D24=DC 12V 24V
A110 A220=AC 110V/50Hz 220V/50Hz
R110 R220=RAC 110V 220V

No marks = manual override
NP = With self-locking manual emergency put rod

No marks=oil supply and drain type control
External supply external drain
E= internal supply external drain
ET=internal supply internal drain
T= External supply internal drain
(For the three-position hydraulic valve can not adapt to the T, ET form

No marks=No commutation time regulator
S=with commutation time regulator, import throttling S2=with commutation time regulator, export throttling

H=DIN43650 plug
L=DIN43650 plug with lamp

No marks=without cartridge damper
B08=with damper0. 8mm
B10=1. 0mm 0.039"
B12=1. 2mm 0.047"
B15=1. 5mm 0.059"

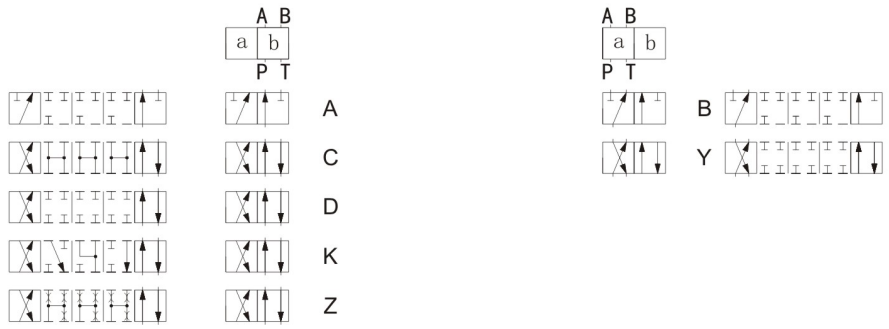
No marks=without pre-pressure valve
P0. 45=with pre-pressure valve0. 45MPa

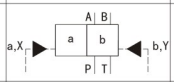
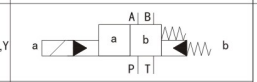
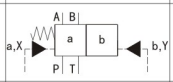
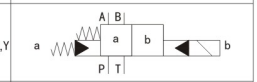
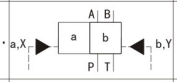
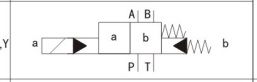
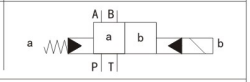
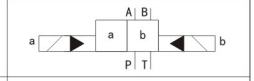
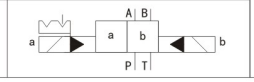
No marks=Without constant ratio pressure reducing valve
D1=With constant ratio pressure reducing valve
(Pressure reducing ratio 1:0. 66)

No marks=
Mineral hydraulic oil
V=Phosphate hydraulic oil

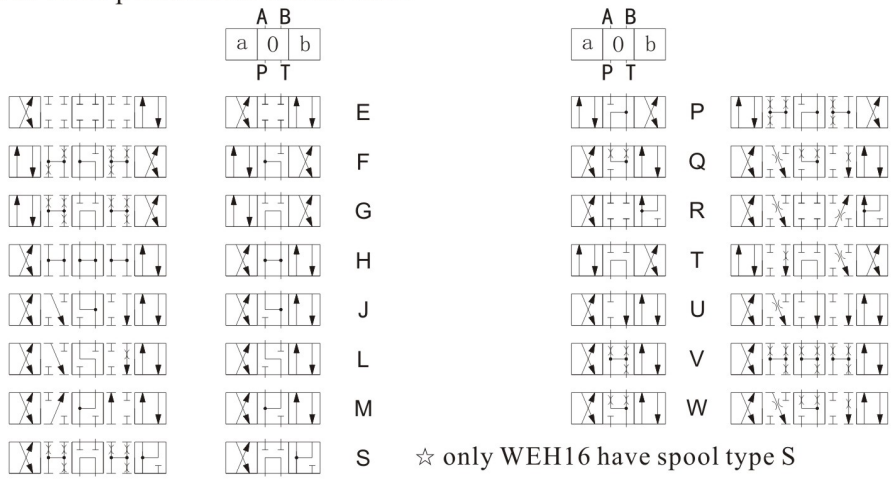
Additional Information

【spool symbol of two position direction valve】

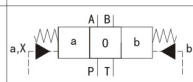
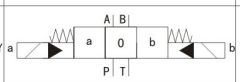
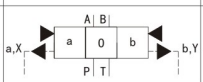
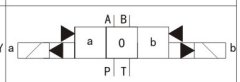
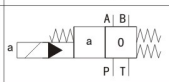
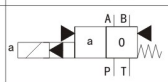
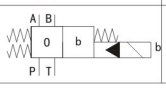
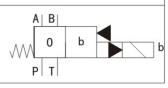


spool type	form	hydraulic drive	electro-hydraulic drive	spool type	form	hydraulic drive	electro-hydraulic drive
A, C, D, K, Z	../..			B, Y	../..		
	..H../..				..H../..		
	..H../O						
	..H/OF						

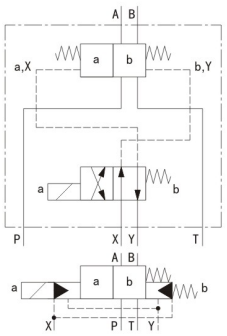
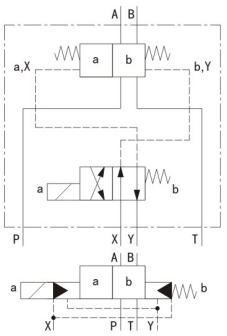
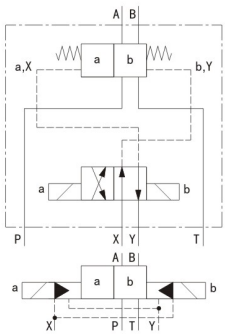
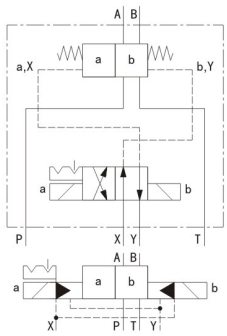
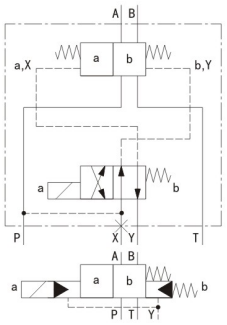
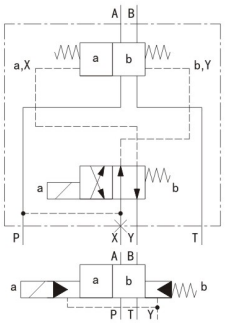
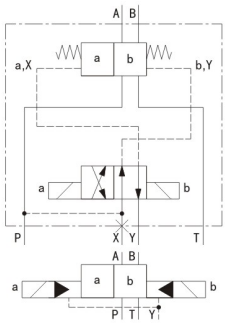
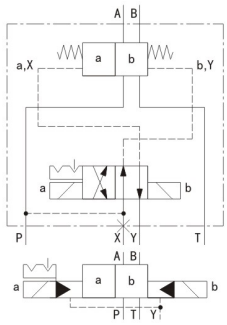
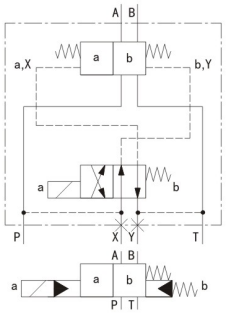
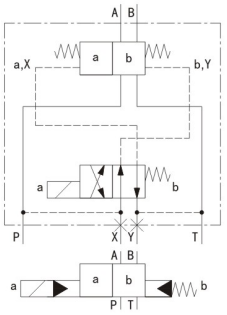
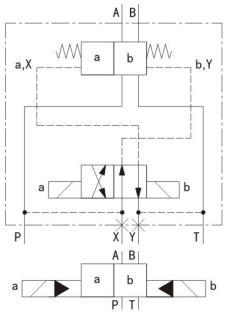
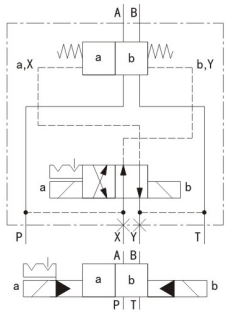
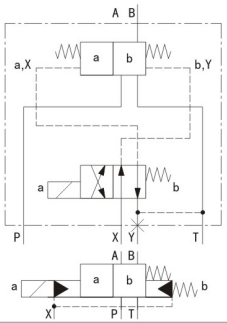
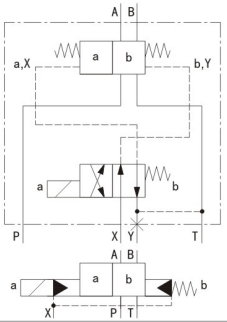
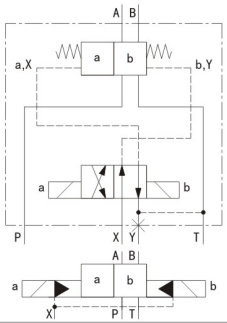
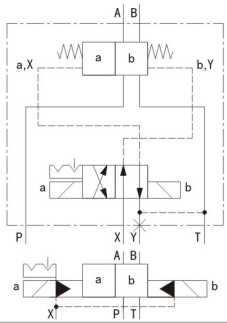
spool symbol of three position direction valve



☆ only WEH16 have spool type S

spool type	direction	spool return	hydraulic drive	electro-hydraulic drive	direction	spool return	hydraulic drive	electro-hydraulic drive
E,F, G,H, J,L, M,Q, R,S, T,U, V,W		../..				..H../..		
		.A				H.A		
		.B				H.B		

【the detailed & simplified spool symbol of two position direction valve】

	4WEH.../..	4WEH .H../...	4WEH .H../O...	4WEH .H../OF...
X= exterior Y=exterior				
X=interior Y=exterior	4WEH.../...E...	4WEH .H../...E...	4WEH .H../O...E...	4WEH .H../OF...E...
				
X=interior Y= interior	4WEH.../...ET...	4WEH .H../...ET...	4WEH .H../O...ET...	4WEH .H../OF...ET...
				
X=exterior Y=interior	4WEH.../...T...	4WEH .H../...T...	4WEH .H../O...T...	4WEH .H../OF...T...
				

【the detailed & simplified spool symbol of three position direction valve】

X= exterior Y=exterior	4WEH.../...	4WEH .H../...
X=interior Y=exterior	4WEH.../...E...	4WEH .H../...E...
X=interior Y=interior	4WEH.../...ET...	
X=exterior Y=interior	4WEH.../...T...	

【technical specifications】

1. The hydraulic part

WEH10 type of electro-hydraulic operated directional valve

The highest working pressure：P.A.B~31.5MPa (4568 PSI)		
T port	Controlling oil external drain	31.5 (4568 PSI)
	Controlling oil internal drain	21 (MPa DC) : 16 (MPa AC) (3045 PSI DC) (2320 PSI AC)
Y port	Controlling oil external drain	21 (MPa DC) : 16 (MPa AC) (3045 PSI DC) (2320 PSI AC)
Minimum Control pressure （Mpa）	Controlling oil external supply Controlling oil internal supply （not suitable to C/Z/F/G/H/P/T/V)	Three-way valve 1
		Two-way valve with spring return 1
		Two-way valve with hydraulic return 0.7
	Controlling oil internal supply （not suitable to C/Z/F/G/H/P/T/V	0.45
Maximum control pressure		25 Mpa (3625 PSI)
Liquid medium		Mineral oil， organic phosphate oil
Oil temperature range		-30~+80°C（used to NBR seal）(-22 + 176°F) -20~+80°C（used to rubber seal） (-4 + 176°F)
Viscosity range		2.8~500 mm²/s (0.004 inch²/s - 0.775 inch²/s)
Control flow when switch （cm3）		Three-way valve 2.04 two-way valve 4.08 (0.122 inch³ ~ 0.244 inch³)

The total switch time of valve switching from zero position to switch position

Control pressure （Mpa）		7 (1015 PSI)		14 (2030 PSI)		21 (3045 PSI)		25 (3625 PSI)	
		AC	DC	AC	DC	AC	DC	AC	DC
Three-way valve	（ms）	30	65	25	60	20	55	15	50
Two-way valve	（ms）	35	80	30	75	25	70	20	65

The total switch time of valve switching from zero position to switch position

Three-way valve （ms）		30 (98 fs)							
Two-way valve （ms）	（ms）	35	40	30	35	25	30	20	25
The flow of minimum time switching （1/min)		~35 (9 gallon/min)							
Installation position		HC.HD.HK.HZ.HY with hydraulics return should be installed horizontally,							
weight	Single solenoid valve	6.4							
	double solenoids valve	6.8							
	The regulator for timing the switch time	0.8							
	Constant ratio pressure reducing valve	0.5							

* Reversing time means the time which is taken between the solenoid of pilot valve pull- in and the main valve fully opening

The highest working pressure（P/A/B port）		H–WEH25...type	...WEH25...type
		35 (5076 PSI)	28 (4061 PSI)
Fluid Port T (Mpa)	Controlling oil external drain	25 (3625 PSI)	25 (3625 PSI)
	Controlling oil internal drain	DC 21Mpa (3045 PSI)	AC 16Mpa (2320 PSI)
		Three-way valve with hydraulic centre	Controlling oil internal drain is impossible
Fluid Port Y (Mpa)	Controlling oil external drain	DC 21Mpa (3045 PSI)	AC 16Mpa (2320 PSI)
Minimum controlling pressure（Mpa）	Controlling oil external supply（Mpa） Controlling oil internal supply（Mpa) Controlling oil internal supply（Mpa)	Three-way valve 1.4 Two-way valve with spring return 1.4 Two-way valve with hydraulics return 1.4 Using pre-pressure valve or when flow is big, if spool symbol with C,Z,F,G,H,P,S,T ,V, it is 0.45	
		Mineral oil；organic phosphate oil	
Maximum control pressure		25（Mpa）(3625 PSI)	
Liquid medium		Mineral oil；organic phosphate oil	
Oil temperature range		-30~+80（℃）（used to NBR seal） (- 22 + 176°F) -20~+80（℃）（used to rubber seal） (- 4 + 176°F)	
Viscosity range		2.8–500（mm2/s) (0.004 inch²/s - 0.775 inch²/s)	

The maximum capacity of controlling oil when switch

Three-way valve with spring centralize	14.2（cm3）(0.886 inch³)
Two-way valve	28.4（cm3）(1.773 inch³)

Three-way valve with hydraulics centralize

From position“0” to working position“a”	7.15（cm3）(0.436 inch³)
From working position “a”to position“0”	7.0（cm3）(0.427 inch³)
From position“a”to working position“b”	14.15（cm3）(0.863 inch³)
From working position “b”to“0”	5.73（cm3）(0.349 inch³)

The time for switching from position“0”to working position（solenoid DC and AC）

Pilot control pressure（MPa）	5 (725 PSI)				15 (2175 PSI)				21 (3045 PSI)				25 (3625 PSI)			
	AC		DC		AC		DC		AC		DC		AC		DC	
Three-way valve with spring centralize (ms)	50		85		40		75		35		70		30		65	
Two-way valve with spring return (ms)	120		160		100		130		85		120		70		105	
Three-way valve with hydraulics centralize（ms）	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
Pilot control pressure (MPa)／(PSI)	30	35	55	65	30	35	55	65	25	30	50	60	25	30	50	60
	4351	5076	7977	9427	4351	5076	7977	9427	3625	4351	7251	8702	3625	4351	7251	8702

Three-way valve with spring centralize （ms）	40 (131 fs)															
Two-way valve with spring return (ms)	120		125		95		100		85		90		75		80	
Three-way valve with spring centralize （ms）	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
	30	35	30	35	30	35	30	35	30	35	30	35	30	35	30	35

Mounting position	Except C.D.K.Z.Y type valve with hydraulics return installed horizontally, others can installed as your will
The flow of shorter time switching	About 35 1/min (9 Gallon/min)
Whole valve weight	About 18 kg (40 lbs)

The highest working pressure（P/A/B port）		H-WEH16...type	...WEH16...type
		35	28
Fluid Port T	Controlling oil external drain	25	25
	Controlling oil internal drain	DC 21Mpa (3045 PSI)	AC 16Mpa (2320 PSI)
		Three-way valve with hydraulic centre	Controlling oil internal drain is impossible
Fluid Port Y	Controlling oil external drain	DC 21Mpa (3045 PSI)	AC 16Mpa (2320 PSI)
Minimum controlling pressure（Mpa）	Controlling oil external supply（Mpa） Controlling oil internal supply（Mpa) Controlling oil internal supply（Mpa)	Three-way valve 1.4 Two-way valve with spring return 1.4 Two-way valve with hydraulics return 1.4 Using pre-pressure valve or when flow is big, if spool symbol with C,Z,F,G,H,P,S,T ,V, it is 0.45	
Maximum control pressure		25（Mpa）(3625 PSI)	
Liquid medium		Mineral oil； organic phosphate oil	
Oil temperature range		-30~+80（℃）（used to NBR seal） (-22 + 176°F) -20~+80（℃）（used to rubber seal） (-4 + 176°F)	
Viscosity range		2.8–500（mm2/s) (0.004 inch²/s - 0.775 inch²/s)	
The maximum capacity of controlling oil when switch			
Three-way with spring centralize		5. 72（cm3）(0.349 inch³)	
Two-way valve		11. 45（cm3） (0.698 inch³)	
Three-way valve with hydraulics centralize			
From position “0” to working position “a”		2.83（cm3）(0.172 inch³)	
From working position “a”to position“0”		2.9（cm3） (0.176 inch³)	
From position“a”to working position“b”		5.72（cm3） (0.349 inch³)	
From working position “b”to“0”		2.83（cm3） (0.172 inch³)	

The time for switching from position “0” to working position（solenoid DC and AC）

Pilot control pressure （MPa）	5 (725 PSI)				15 (2175 PSI)				25 (3625 PSI)			
	AC		DC		AC		DC		AC		DC	
hree-way valve with spring centralize (ms)	35		65		30		60		30		58	
Two-way valve with spring return (ms)	45		65		35		65		30		50	
Three-way valve with hydraulics centralize（ms)	a	b	a	b	a	b	a	b	a	b	a	b
	30	30	65	65	25	25	55	63	20	25	55	60
Three-way valve with spring centralize（ms)	30 (98 fs)											
Two-way valve with spring return （ms）	45		45		35		35		30		30	
Three-way valve with hydraulics centralize	a	b	a	b	a	b	a	b	a	b	a	b
	20		20		20		20		20		20	

Mounting position	Except C.D.K.Z.Y type valve with hydraulics return installed horizontally, others can installed as your will
The flow of shorter time switching	About 35 1/min (9 Gallon/min)
Whole valve weight	About 8.6（kg） (19 lbs)

* Reversing time means the time which is taken between the solenoid of pilot valve pull- in and the main valve fully opening

The highest working pressure（P/A/B port）		H–WEH32...type	...WEH32...type
		35	28
Fluid Port T (Mpa)	Controlling oil external drain	25	25
	Controlling oil internal drain	DC 21Mpa (3045 PSI)	AC 16Mpa (2320 PSI)
		Three-way valve with hydraulic centre	Controlling oil internal drain is impossible
Fluid Port Y (Mpa)	Controlling oil external drain	DC 21Mpa (3045 PSI)	AC 16Mpa (2320 PSI)
Minimum controlling pressure（Mpa）	Controlling oil external supply（Mpa） Controlling oil internal supply（Mpa）	Three-way valve 0.8 Two-way valve with spring return 1.0 Two-way valve with hydraulics return 0.5	
	Controlling oil internal supply	Using pre-pressure valve or when flow is big, if spool symbol with C,Z,F,G,H,P,S,T ,V, it is 0.45	
Maximum control pressure		25（Mpa） (3625 PSI)	
Liquid medium		Mineral oil； organic phosphate oil	
Oil temperature range		-30~+80（℃）（used to NBR seal） (-22 + 176°F) -20~+80（℃）（used to rubber seal） (-4 + 176°F)	
Viscosity range		2.8–500（mm2/s) (0.004 inch²/s - 0.775 inch²/s)	
The maximum capacity of controlling oil when switch			
Three-way valve with spring centralize		29.4（cm3） (1.794 inch³)	
Two-way valve		58.8（cm3） (3.588 inch³)	
Three-way valve with hydraulics centralize			
From position“0” to working position“a”		14.4（cm3） (0.878 inch³)	
From working position “a”to position“0”		15.1（cm3） (0.921 inch³)	
From position“a”to working position“b”		29.4（cm3） (1.794 inch³)	
From working position “b”to“0”		14.4（cm3） (0.878 inch³)	

The time for switching from position“0”to working position（solenoid DC and AC）

Pilot control pressure （MPa）		5 (725 PSI)				15 (2175 PSI)				25 (3625 PSI)			
		AC		DC		AC		DC		AC		DC	
Three-way valve with spring centralize	(ms)/fs	65 (213)		80 (262)		50 (164)		90 (295)		35 (114)		105 (344)	
Two-way valve with spring return （ms）	(ms)/fs	100 (328)		130 (426)		75 (246)		100 (328)		60 (196)		115 (377)	
Three-way valve with hydraulics centralize		a	b	a	b	a	b	a	b	a	b	a	b
	(ms)	55	60	100	105	40	45	85	95	35	40	85	95
	(fs)	180	196	328	344	131	147	278	311	114	131	278	311

The time for switching from working position to position“0”

Pilot control pressure （MPa）		(DC：50) （AC：60）											
Three-way valve with spring centralize	(ms)/fs	115 (377)		90 (295)		85 (278)		70 (229)		65 (213)		65 (213)	
Two-way valve with spring return （ms）		a	b	a	b	a	b	a	b	a	b	a	b
Three-way valve with hydraulics centralize	(ms)	30	50	30	40	60	75	30	30	105	140	50	50
	(fs)	98	164	98	131	196	246	98	98	344	459	164	164

Mounting position	Except C.D.K.Z.Y type valve with hydraulics return installed horizontally, others can installed as your will
The flow of shorter time switching	About 50 1/min (13 Gallon/min)
Whole valve weight	Valve with single solenoid is 40.5kg (89 lbs)， with double solenoids is 41kg (90 lbs)

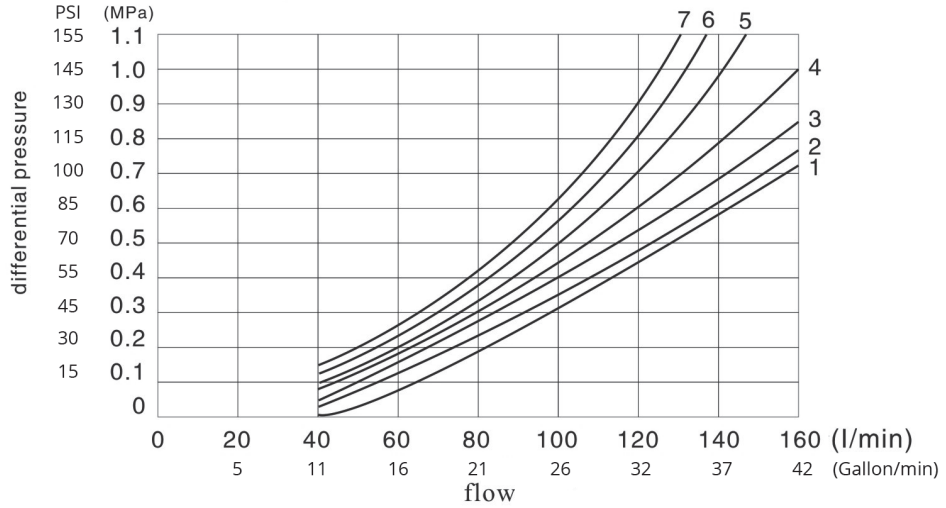
* Reversing time means the time which is taken between the solenoid of pilot valve pull- in and the main valve fully opening

【Technical specifications】

Voltage type	DC	AC
voltage	12.24.48.96.110.220	110.220
power（W)	30	——
Holding power(p)		36
Start voltage and current（VA)		220
Running status	continuous	
Environment temperature range	~+50（℃） (122°F)	
Coil temperature range	~+150（℃）(302°F)	
Protection degree of enclosure	IP65	

【feature curve】

4WEH10...type（result tested when using HLP46， t=40℃ ±50℃）

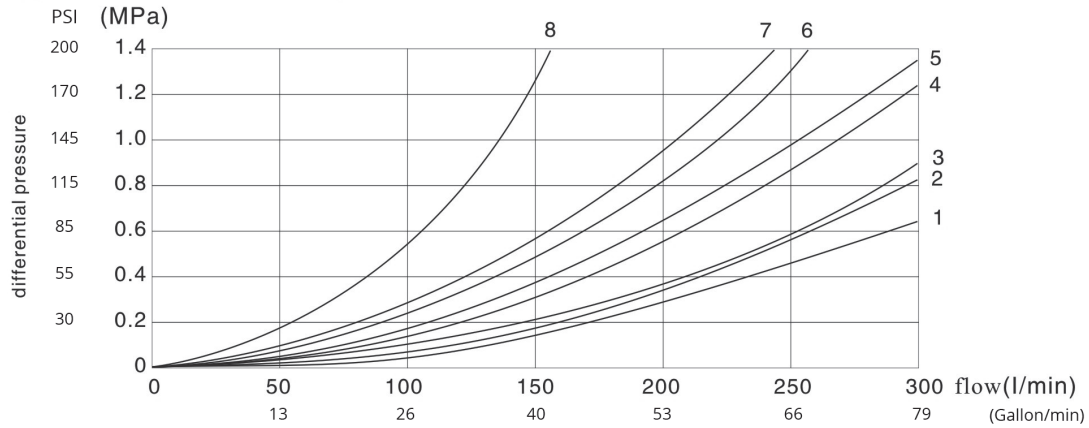


pressure loss curve of electro-hydraulic direction valve WEH10 type

spool symbol	switch position				spool symbol	meso-position		
	P—A	P—B	A—T	B—T		A—T	B—T	P—T
E、Y、D	2	2	4	5				
F	1	4	1	4	F	3	—	6
G、T	4	2	2	6	G、T	—	—	7
H、C	4	4	1	4	H	1	3	5
J、K	1	2	1	3				
L	2	3	1	4	L	3	—	—
M	4	4	3	4				
P	4	1	3	4	P	—	7	5
Q、V、W、Z	2	2	3	5				
R	2	2	3	–				
U	3	3	3	4	U	—	4	—

【feature curve】

4WEH16…type（result tested when using HLP46，t=40℃ ±50℃）

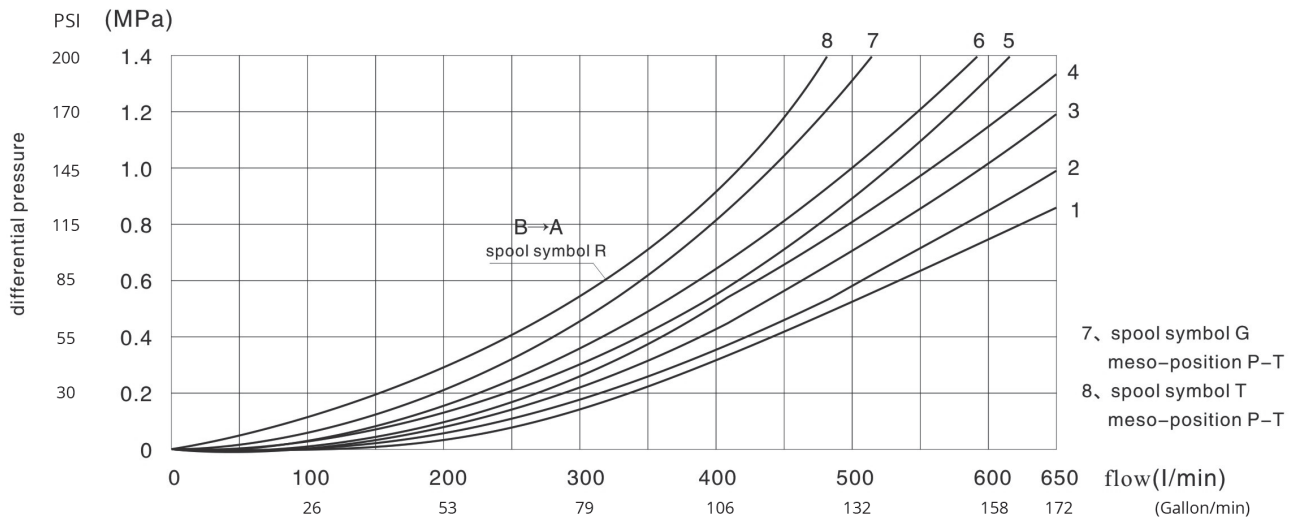


pressure loss curve of electro-hydraulic direction valve WEH16 type

spool symbol	switch position				
	P→A	P→B	A→T	B→T	P→T
E、Y、D	1	1	1	3	–
F	2	2	3	3	–
G、T	5	1	3	7	6
H、C、Q、V、Z	2	2	3	3	–
J、K、L	1	1	3	3	–

spool symbol	switch position				
	P→A	P→B	A→T	B→T	P→T
M、W	2	2	4	3	–
R	2	2	4	–	–
U	1	1	4	7	–
S	4	4	4	–	8

4WEH25…type（result tested when using HLP46，t=40℃ ±50℃）(104°F) (-58°F + 122°F)



pressure loss curve of electro-hydraulic direction valve WEH25 type

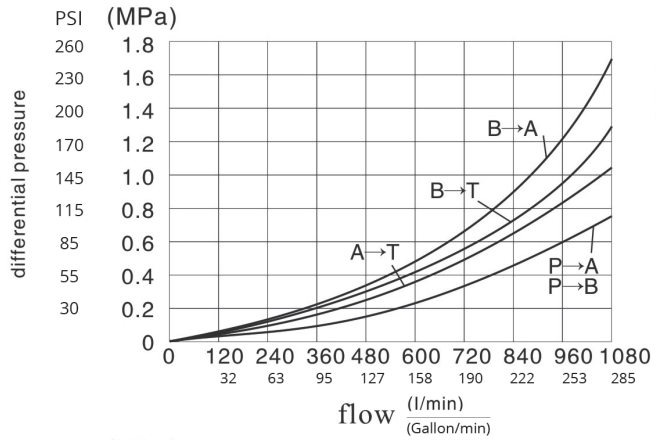
spool symbol	switch position			
	P→A	P→B	A→T	B→T
E	1	1	1	3
F	1	4	3	3
G	3	1	2	4
H	4	4	3	4
J、Q	2	2	3	5

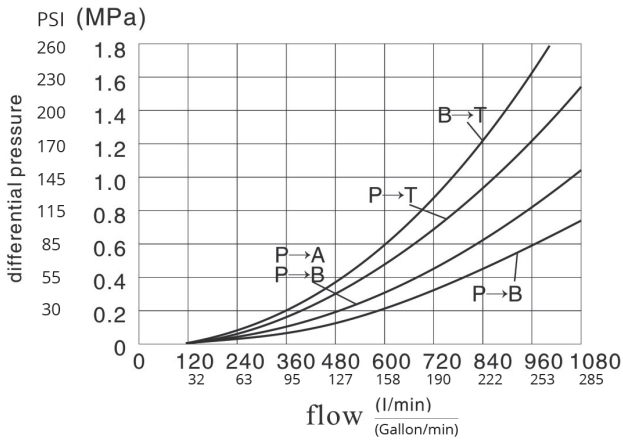
spool symbol	switch position			
	P→A	P→B	A→T	B→T
L	2	2	3	3
M	4	4	1	4
P	4	1	1	5
R	2	1	1	–

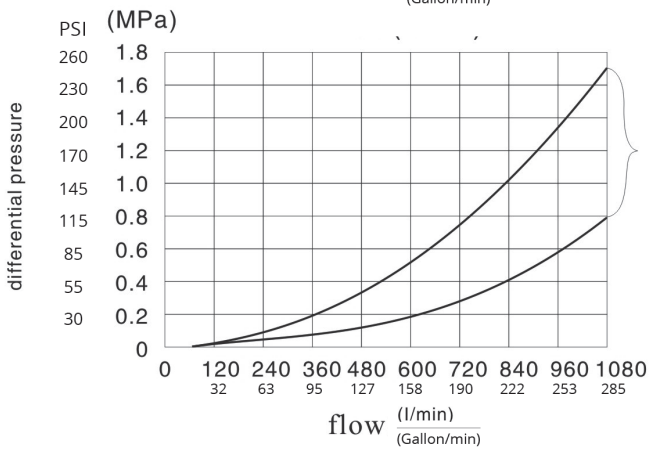
spool symbol	switch position			
	P→A	P→B	A→T	B→T
U	4	1	1	6
V	2	4	3	6
W	1	1	1	3
T	3	1	2	4

【feature curve】

4WEH16…type（result tested when using HLP46， t=40℃ ±50℃）







the curves of other spool symbol

pressure loss curve of electro-hydraulic direction valve WEH32 type

the open area of each flow direction when spool is in the centre position

Size	spool symbol	Open Area (mm²) / (inch²)							
		P→A		P→B		A→T		B→T	
WEH10	Q	–				13	0.02	13	0.02
	V	13	0.02	13	0.02	13	0.02	13	0.02
	W	–		–		2.4	0.003	2.4	0.003
WEH16	Q	–		–		32	0.04	32	0.04
	V	32	0.04	32	0.04	32	0.04	32	0.04
	W	–		–		6	0.09	6	0.09
WEH25	Q	–		–		83	0.128	83	0.128
	V					83	0.128	83	0.128
	W	83	0.128	83	0.128	14	0.021	14	0.021
WEH32	Q	–		–		78	0.12	78	0.12
	V	73	0.113	73	0.113	84	0.13	84	0.13
	W	–		–		20	0.031	20	0.031

【power limit】

Due to the adhesion effect the valve's reversing function. In order to reach the allowed maximum flow and without affecting the performance， advise to use full flow filter of 25 microns in system. fluid power of internal valve also influence on the reversing performance, thus different slide valve function have different power limit, if A flow direction, such as the port A or B of four-way valve closed, used as three way valve, in serious cases will greatly reduce the flow.

Function limit form of WEH10 type electro-hydraulic operated directional valve

Three-way valve, spring centralizing			
flow spool symbol	Pressure stage (MPa / PSI)		
	20 - (2900 PSI)	25 - (3625 PSI)	31.5 - (4568 PSI)
E, J, L, M, Q, U W, R, V	160 l/min (42 Gallon/min)		
H	160 l/min (42 Gallon/min)	150 l/min (39.6 Gallon/min)	120 l/min (32 Gallon/min)
G, T	160 l/min (42 Gallon/min)	-	140 l/min (37 Gallon/min)
F, P	160 l/min (42 Gallon/min)	140 l/min (37 Gallon/min)	120 l/min (32 Gallon/min)
Three-way valve which its main valve with spring return			
G, D, K, Z, Y	160 l/min (42 Gallon/min)		

Two-way valve, main valve without spring			
flow spool symbol	Pressure stage (MPa / PSI)		
	20 - (2900 PSI)	25 - (3625 PSI)	31.5 - (4568 PSI)
HC HD HK HZ HY	160 l/min (42 Gallon/min)		
HC.../O HD.../O HK.../O HZ.../O	160 l/min (42 Gallon/min)		
HC.../OF... HD.../OF... HK.../OF... HZ.../OF...	160 l/min (42 Gallon/min)		

Function limit form of WEH10 type electro-hydraulic operated directional valve

Three-way valve with spring centralizing					
flow (l/min, Gallon/min)	Pressure stage (MPa / PSI)				
	7 - 1015	14 - 2030	21 - 3045	28 - 4061	35 - 5076
E, J, L, M, Q, U, W, R, H	300 / 79	300 / 79	300 / 79	300 / 79	300 / 79
F, P	300 / 79	250 / 66	180 / 47.5	170 / 45	150 / 40
G, T		300 / 79	240 / 63	210 / 55	190 / 50
S	300 / 79	300 / 79	300 / 79	250 / 66	220 / 58
V		250 / 66	210 / 55	200 / 53	180 / 47.5
Three-way valve with hydraulics centralizing (minimum control pressure : 1.6 MPa)					
All spool symbol	300 / 79	300 / 79	300 / 79	300 / 79	300 / 79

Two-way valve					
flow (l/min, Gallon/min)	Pressure stage (MPa / PSI)				
spool symbol	7 - 1015	14 - 2030	21 - 3045	28 - 4061	35 - 5076
C	300 / 79	300 / 79	300 / 79	300 / 79	300 / 79
D, Y	300 / 79	270 / 71	260 / 69	250 / 66	230 / 61
K	300 / 79	250 / 66	240 / 63	230 / 60	210 / 55
Z	300 / 79	260 / 69	190 / 50	180 / 48	160 / 42
Two-way valve with hydraulics return					
HC, HZ, HK, HY	300 / 79	300 / 79	300 / 79	300 / 79	300 / 79
When control oil is internal supply, and installed pre-pressure valve, the flow of spool symbol H, F, P, G, T, S, V, C, Z hit 160 l/min					

Remark : For three-way & four channel directional valve with hydraulics centralizing, if its pressure exceeded regulation power limit, the controlling pressure have to be improved higher, when working pressure P = 35 MPa, flow Q = 300 l/min, controlling pressure need to be 1.6 MPa.

Three-way valve with spring centralizing					
flow (l/min, Gallon/min)	Pressure stage (MPa / PSI)				
	7 - 1015	14 - 2030	21 - 3045	28 - 4061	35 - 5076
E, L, M U, W, Q	650 / 172	650 / 172	650 / 172	650 / 172	650 / 172
G, T	400 / 106	400 / 106	400 / 106	400 / 106	400 / 106
F	650 / 172	550 / 145	430 / 114	330 / 87	300 / 79
H	650 / 172	650 / 172	550 / 145	400 / 106	360 / 95
J	650 / 172	650 / 172	650 / 172	600 / 158	520 / 137
P	650 / 172	550 / 145	430 / 113	350 / 92	300 / 79
V	650 / 172	550 / 145	400 / 106	350 / 92	310 / 82
R	650 / 172	650 / 172	650 / 172	650 / 172	580 / 153
Three-way valve with hydraulics centralizing (minimum control pressure 1.8 MPa)					
E, F, H, J, L, M, P, Q, R, U, V, W	650 / 172	650 / 172	650 / 172	650 / 172	650 / 172
G, T	400 / 106	400 / 106	400 / 106	400 / 106	400 / 106
Three-way valve with hydraulics centralizing (minimum control pressure 3 MPa)					
G, T	650 / 172	650 / 172	650 / 172	650 / 172	650 / 172

Two-way valve					
flow (l/min, Gallon/min)	Pressure stage (MPa / PSI)				
spool symbol	7 - 1015	14 - 2030	21 - 3045	28 - 4061	35 - 5076
G, D, K, Z, Y	650 / 172	650 / 172	650 / 172	650 / 172	650 / 172
Two-way valve with hydraulics return					
HC HD HK HZ HY	650 / 172	650 / 172	650 / 172	650 / 172	650 / 172
HC.../O HC.../O HK.../O HZ.../O	650 / 172	650 / 172	650 / 172	650 / 172	650 / 172
HC.../OF... HD.../OF... HK.../OF... HZ.../OF...	650 / 172	650 / 172	650 / 172	650 / 172	650 / 172
When control oil is internal supply, and installed pre-pressure valve, the flow of spool symbol H, F, P, G, T, S, V, C, Z hit 180 l/min.					

Function limit form of WEH32 type electro-hydraulic operated directional valve

Three-way valve, spring centralizing						Two-way valve					
flow (l/min, Gallon/min)	Pressure stage (MPa / PSI)					flow (l/min, Gallon/min)	Pressure stage (MPa / PSI)				
	7 - 1015	14 - 2030	21 - 3045	28 - 4061	35 - 5076	spool symbol	7 - 1015	14 - 2030	21 - 3045	28 - 4061	35 - 5076
E, J, L, M, R, U, W, Q	1100 / 290	1040 / 275	860 / 227	750 / 198	680 / 180	C, D, K, Z, Y	1100 / 290	1040 / 275	860 / 227	750 / 198	680 / 180
H, G	1100 / 290	1000 / 264	680 / 180	500 / 132	450 / 119	Two-way valve with hydraulics return					
F, T, P	820 / 216	630 / 166	510 / 135	450 / 119	400 / 106						
Three-way valve with hydraulics centralizing (minimum control pressure : 0.85 MPa / 123 PSI)						HC, HD, HK, HZ, HY	1100 / 290	1040 / 275	860 / 227	750 / 198	680 / 180
All spool symbol	1100 / 290	1040 / 275	860 / 227	750 / 198	680 / 180	When control oil is internal supply, and installed pre-pressure valve, the flow of spool symbol H, F, P, G, T, S, V, C, Z hit 160 l/min					

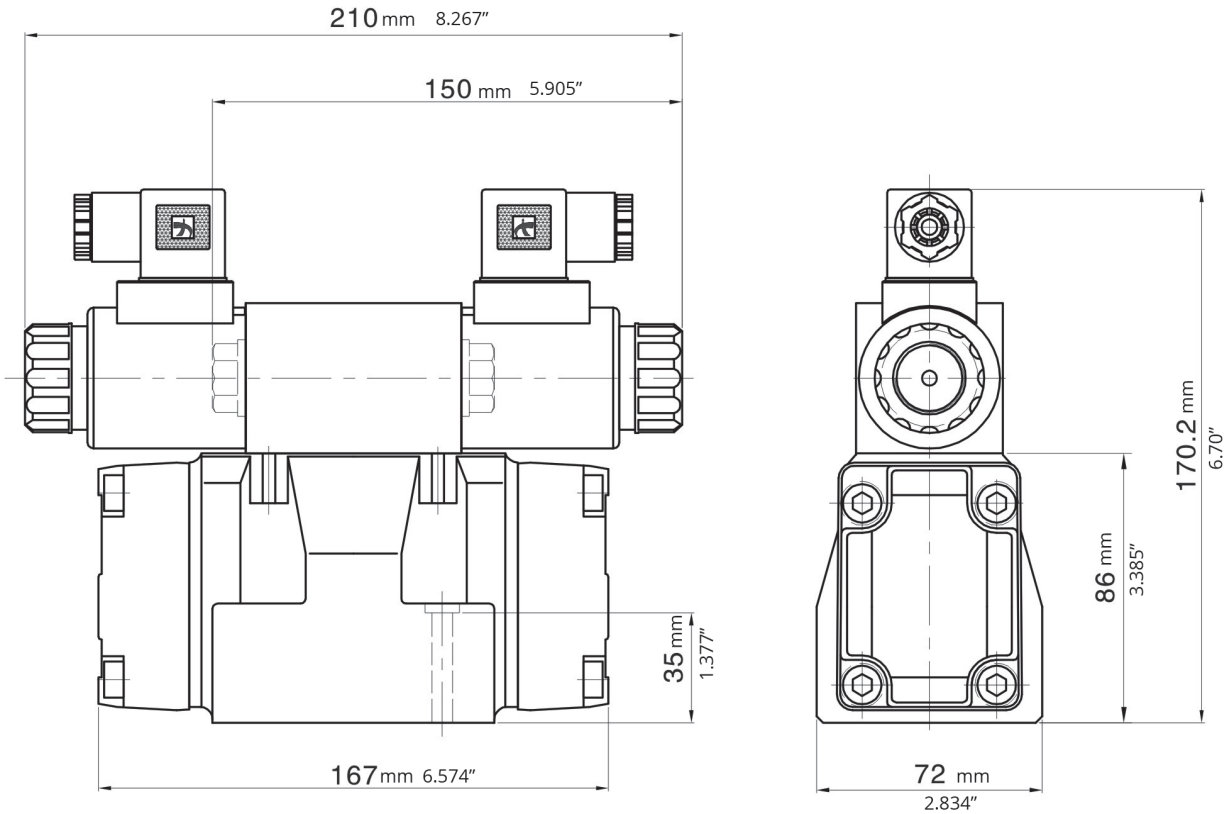
Pilot solenoid operated valve

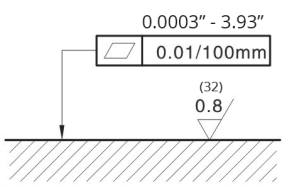
Using 4-way direction valve with nominal diameter size 6（4WE6） as pilot valve. Slide valve be kept in center or original position by spring, and according to solenoid or locator, slide valve kept in the working position. The pilot valve adopt wet-type AC or DC solenoid, toward the spool symbol of the pilot valve be used on the main valve which with kinds of different spool symbol.

Main valve	Pilot solenoid operated valve	
Valve with spring centralizing/ converted two position valve	Using 4WE6J-6X/…three position valve/	4WE6JA… 4WE6JB…
Valve with spring centralizing/ converted two position valve	Using 4WE6J-6X/…three position valve/	4WE6MA… 4WE6MB…
Structure of main valve with two position Y…/…and HY…/… B…/…and HB…/…	Using 4WE6Y-6X/…two position valve	
Two position valve A, C, D, K and Z type spool HA, HC, HD, HK, HZ type valve	Using two position valve with spool type D Structure form of the pilot valve: With spring return, using 4WE6D-6X/… Without spring return, using 4WE6D-6X/O… Without spring return, but with locating device, using 4WE6D-6X/OF…	

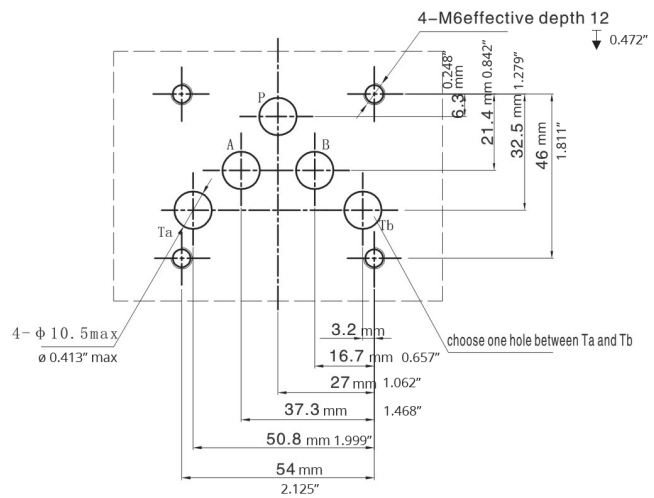
【drawing of installation dimension】

WE–H10

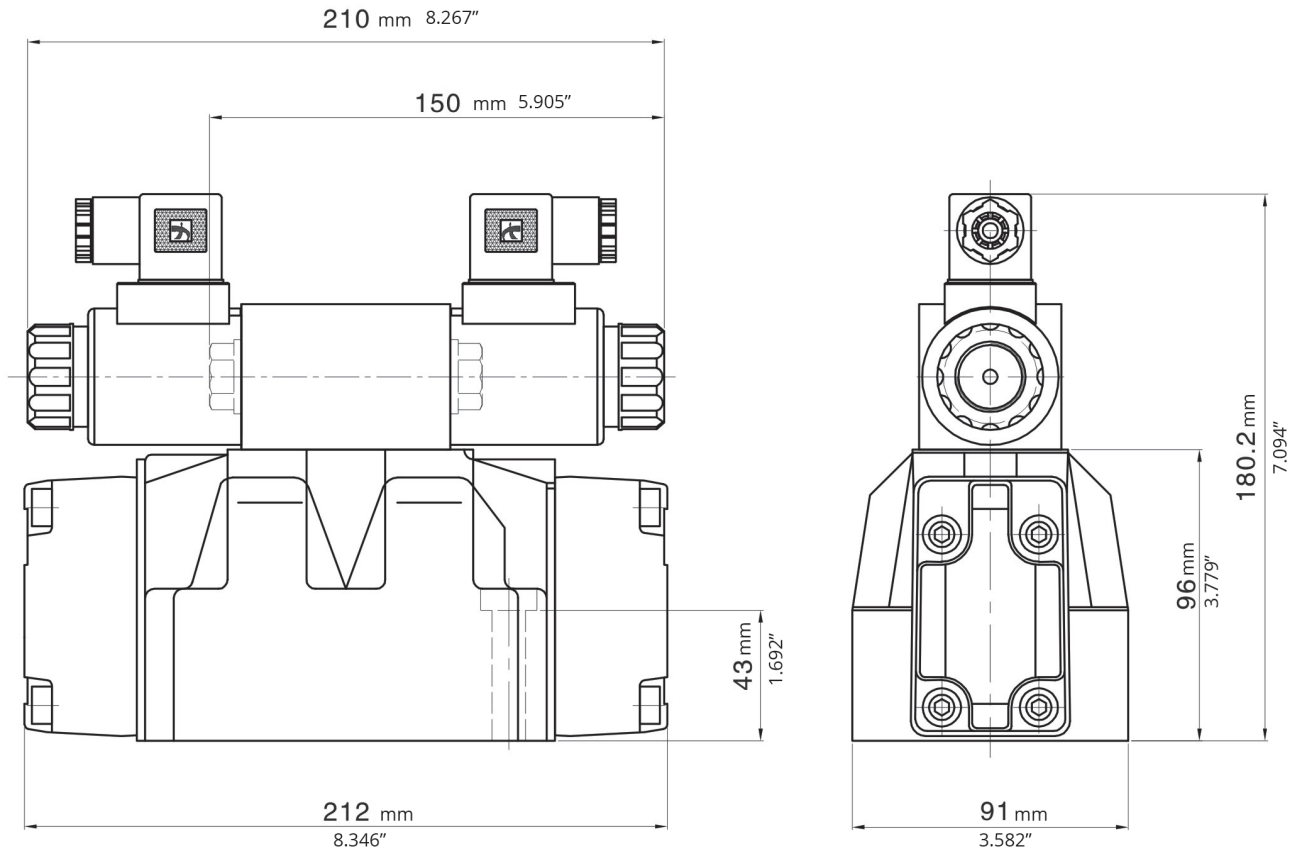


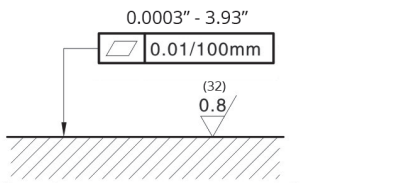


the surface of mating parts request precision process

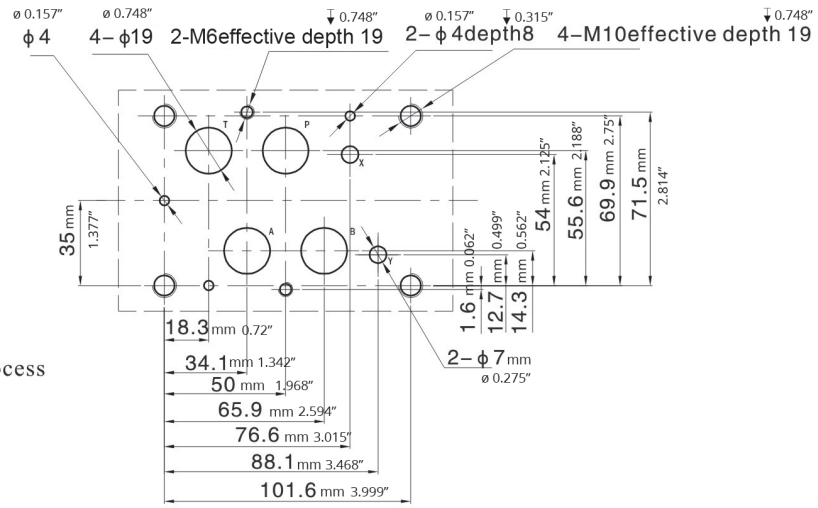


WE–H16

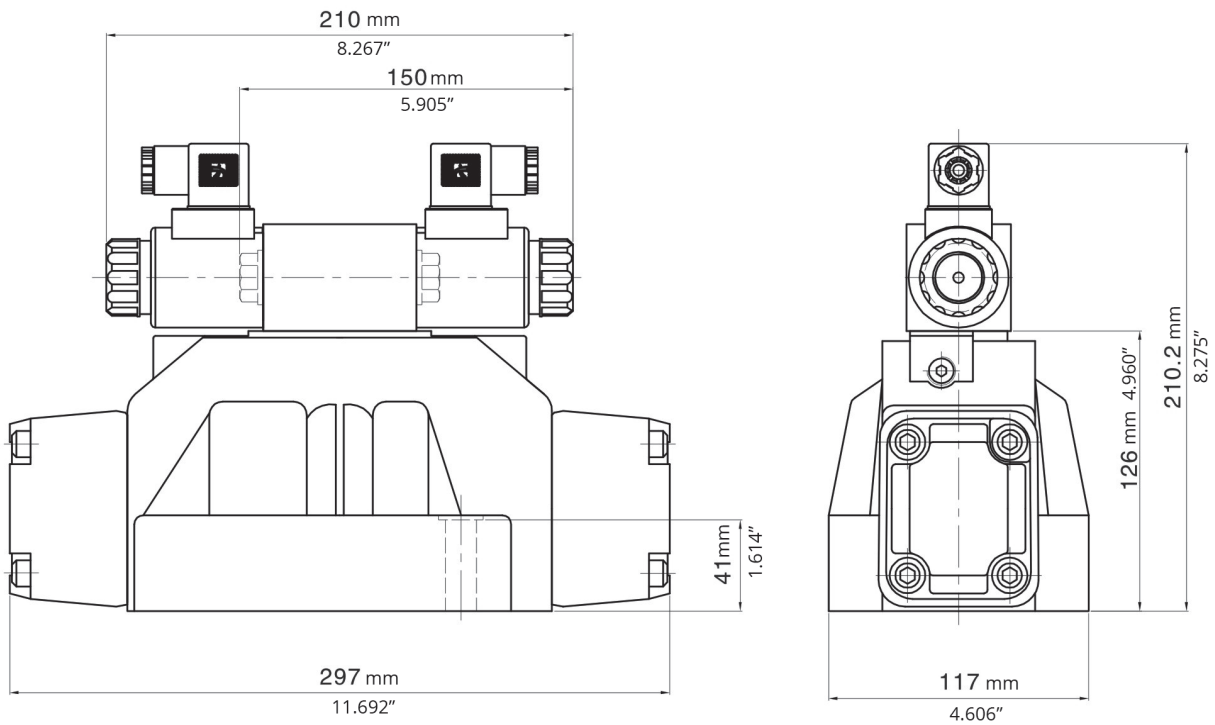


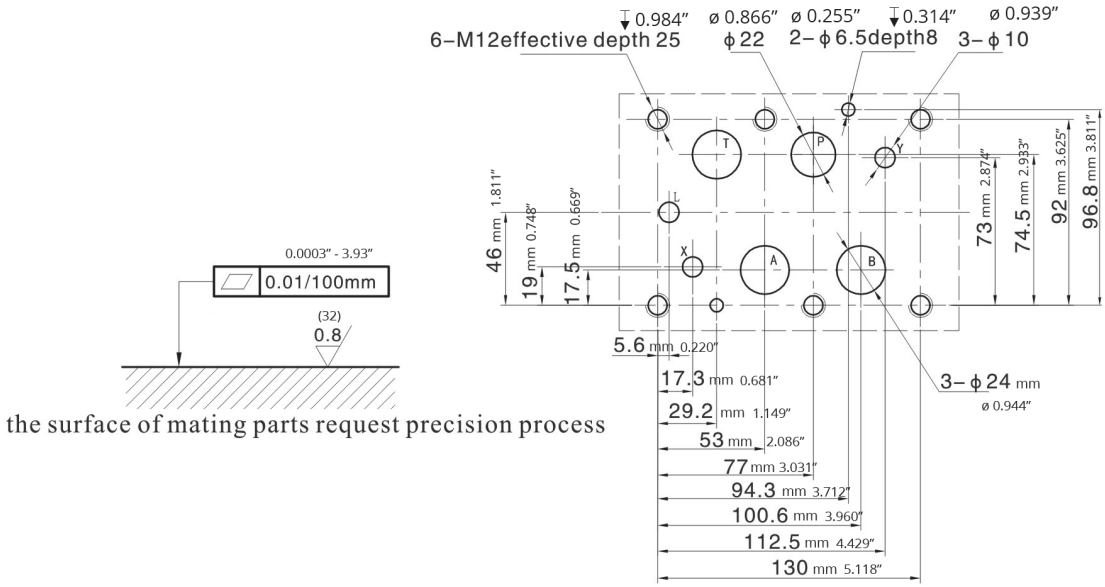


the surface of mating parts request precision process

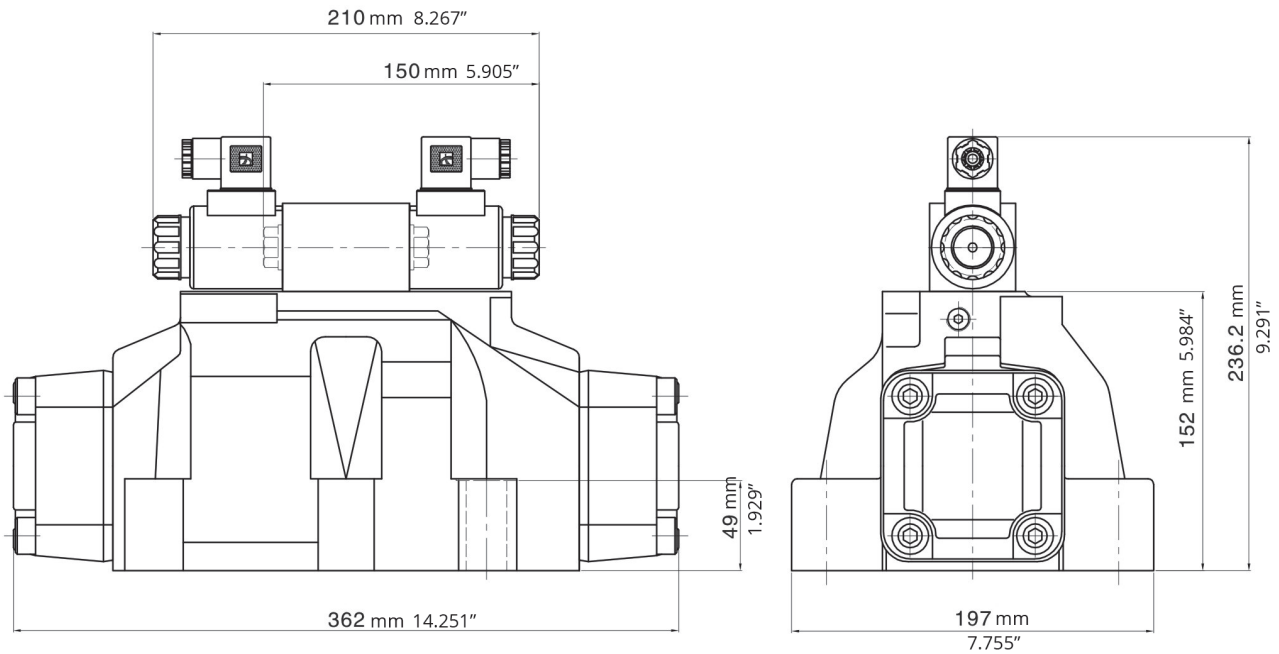


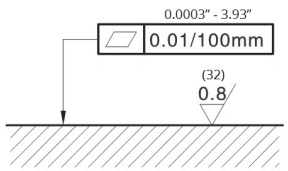
WE–H25


210 mm
8.267″
150 mm
5.905″
41mm
1.614″
297 mm
11.692″
126 mm 4.960″
210.2 mm
8.275″
117 mm
4.606″

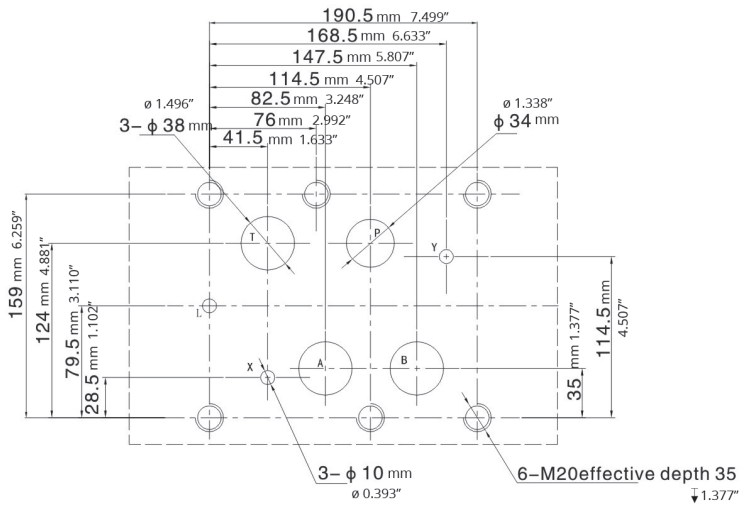

0.984″ ø 0.866″ ø 0.255″ 0.314″ ø 0.939″
6–M12effective depth 25 ϕ22 2–ϕ6.5depth8 3–ϕ10
T P L
46 mm 1.811″
19 mm 0.748″
17.5 mm 0.669″
73 mm 2.874″
74.5 mm 2.933″
92 mm 3.625″
96.8 mm 3.811″
X A B
5.6 mm 0.220″
17.3 mm 0.681″
29.2 mm 1.149″
53 mm 2.086″
77 mm 3.031″
94.3 mm 3.712″
100.6 mm 3.960″
112.5 mm 4.429″
130 mm 5.118″
3–ϕ24 mm
ø 0.944″
0.0003″ - 3.93″
0.01/100mm
(32)
0.8
the surface of mating parts request precision process

WE-H32





the surface of mating parts request precision process

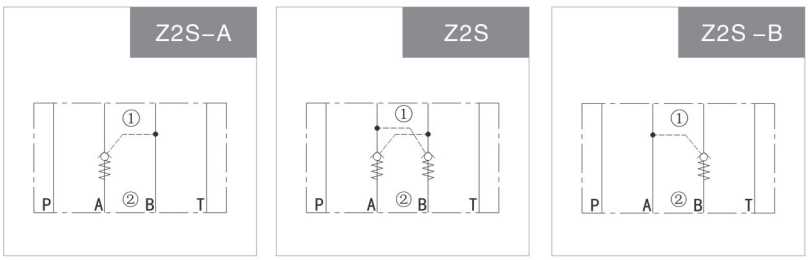


Z2S Series Modular Hydraulic Operated Check Valve

[Product Features]

Modular type
Mounting surface according to DIN24340 A type
ISO 4401 and CETOP RP121H
Used to close one or more chamber oil,
no leakage, good stability
Suitable for modular mounting

【graphic symbol】



[Model Code]

Z2S	10				

Modular hydraulic operated check valve

Size:
6=NG 6
10=NG10
16=NG16

No code =both chamber A and B have check valve
A=chamber A with the check valve
B=chamber B with the check valve

10 NG10 series number
30 NG16、22 series number
40 NG6 series number
10~19 series inner structure and connected dimension are same
30~39 series inner structure and connected dimension are same
40~49 series inner structure and connected dimension are same

No code=NBR seals
V=FKM seals

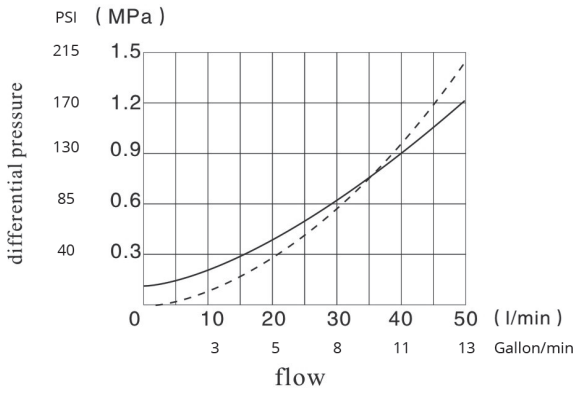
With detailed description

[Technical Data]

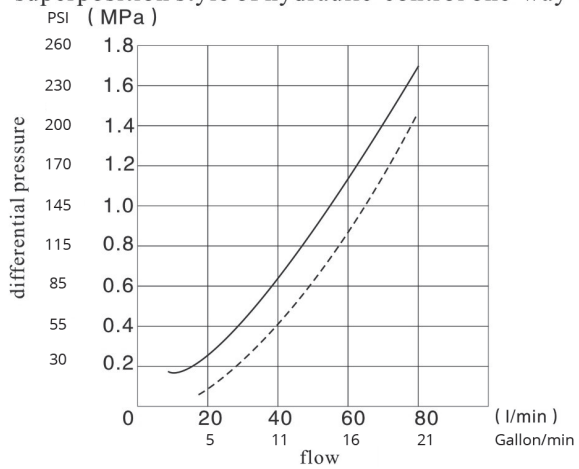
Working medium	Mineral hydraulic oil Phosphate hydraulic oil			
Working medium temperature range	-20~ +80 °C -4°F +176°F			
Viscosity scope	2.8 ~ 500 mm^2/s 0.004/0.775 $inch^2/s$			
Oil flow direction	See the sign			
Operating pressure	31.5 MPa 4568 PSI			
Check valve starting valve（MPa）positive circulation	Size 6 : 0.15 MPa; Size 0.236" : 21.75 PSI;	Size 10.16 : 0.1 MPa; Size 0.399" : 14.5 PSI;	Size 22 : 0.25 MPa; Size 0.866" : 36.25 PSI	
Drift diameter	6 mm 0.236"	10 mm 0.393"	16 mm 0.629"	22 mm 0.866"
Weight	0.8 kg 1.76 lbs	2 kg 4.4 lbs	11.7 kg 25.7 lbs	11.7 kg 25.7 lbs

【flow-pressure drop characteristic】

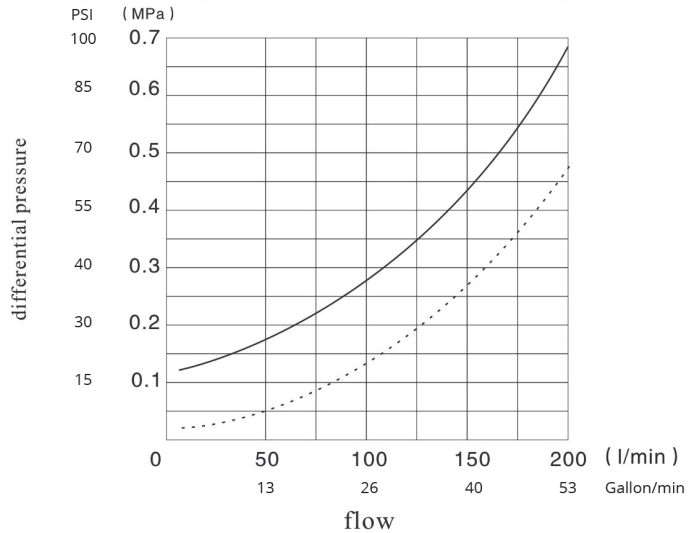
characteristic curve of ** type (Z2S6 type)
superposition style of hydraulic-control one-way valve



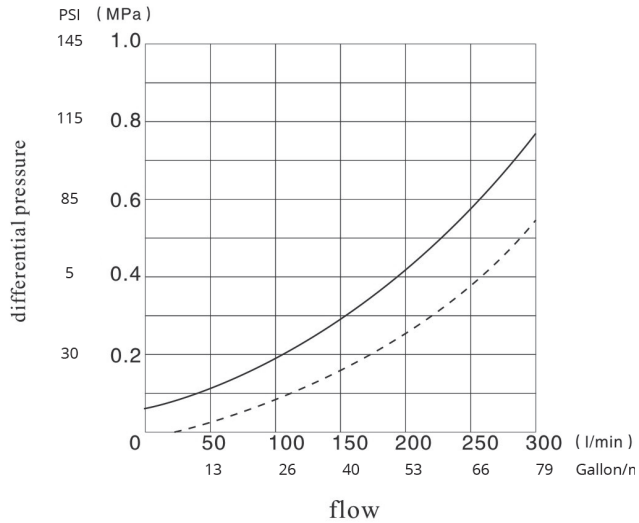
characteristic curve of ** type (Z2S10 type)
superposition style of hydraulic-control one-way valve



characteristic curve of ** type (Z2S16 type)
superposition style of hydraulic-control one-way valve



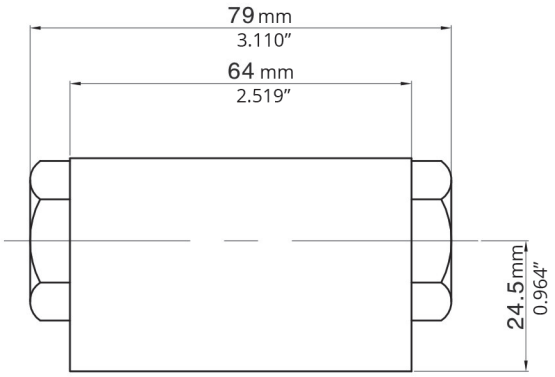
characteristic curve of ** type (Z2S22 type)
superposition style of hydraulic-control one-way valve

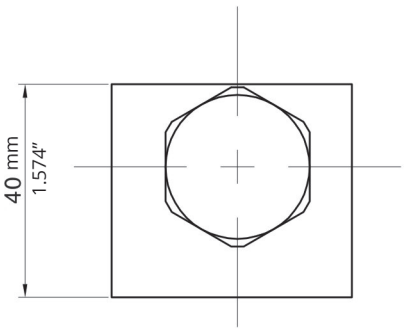


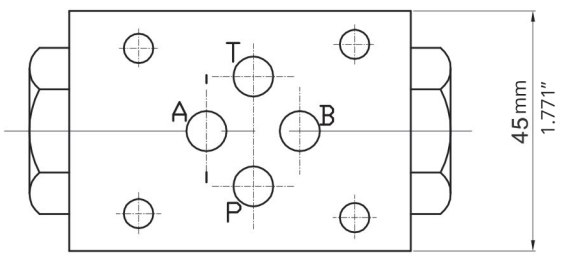
Notice: testing condition v=36mm ²/s； t=50℃
0.055 $inch^2/s$

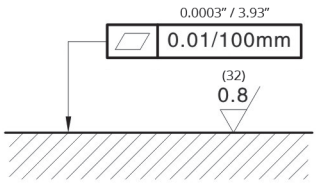
【installation dimension】

Z2S6

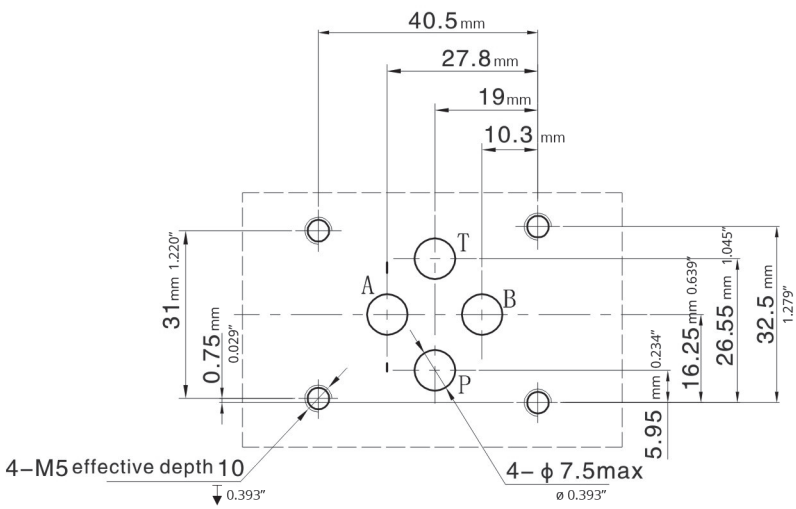




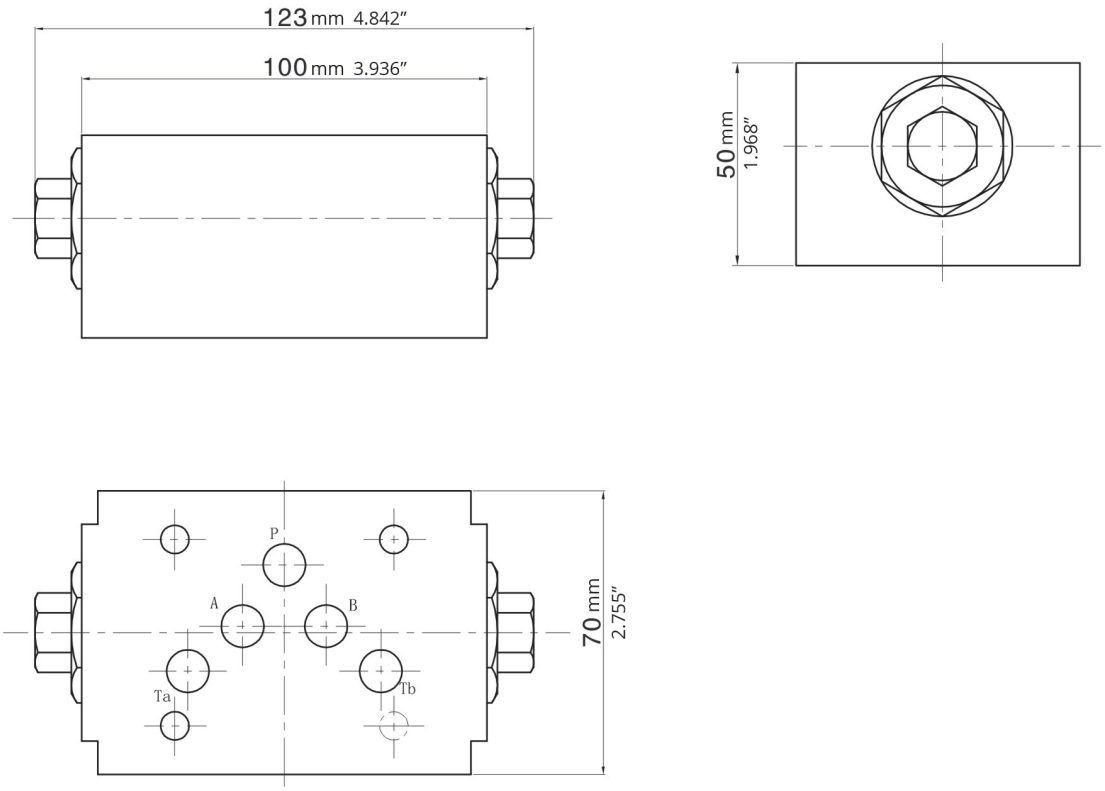




the surface of mating parts
request precision process



Z2S10


123 mm 4.842″
100 mm 3.936″
50 mm 1.968″
P
A
B
Ta
Tb
70 mm 2.755″
4–M6 effective depth 12
0.472
6.3 mm 0.248″
21.4 mm 0.842″
32.5 mm 1.279″
46 mm 1.811″
4– ϕ 10.5max
ø 0.413″
3.2 mm 0.125″
16.7 mm 0.657″
27 mm 1.062″
37.3 mm 1.468″
50.8 mm 1.999″
54 mm 2.125″
the surface of mating parts
request precision process
0.0003″ / 3.93″
0.01/100mm
(32)
0.8
the surface of mating parts
request precision process

[Model Code]

MRV	02	P	K	2	20

Design code

Pressure adjustment pressure
0:0.15-3.5MPa
1:0.7-7MPa
2:3.5-14MPa
3:7-21MPa

Adjustment rod type
Blank：No knob（customized）
K：with plastic knob（standard）

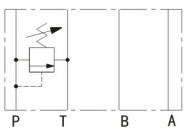
Function bore
P: bore P
A: bore A
B: bore B

Size：
02=NG6
03=NG10

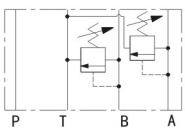
Modular relief valve

[hydraulic symbol]

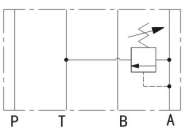
MRV–P



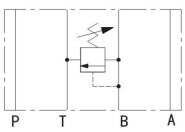
MRV–C



MRV–A



MRV–B

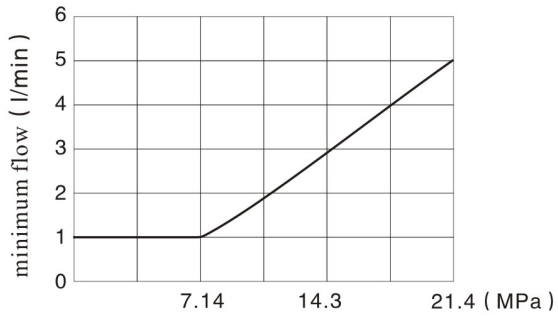


[Technical Data]

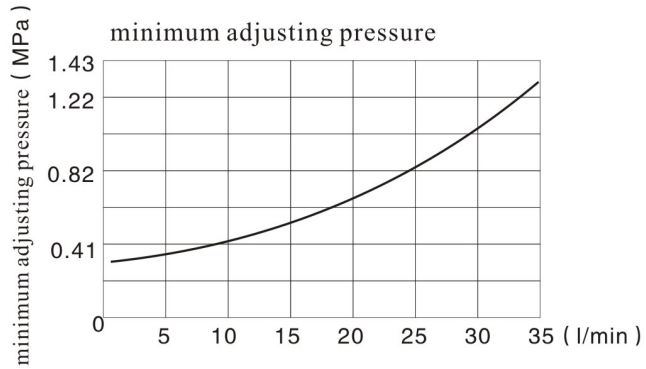
Model	The maximum pressure MPa	Pressure adjustment scope	The maximum flow 1/min	Weight kg
MRV–02	21	0.7–7 3.5–14 7–25	35	1.2
MRV–03			70	2.7

MRV–02

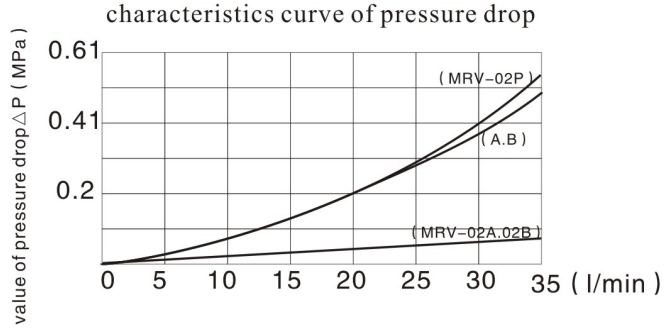
minimum flow



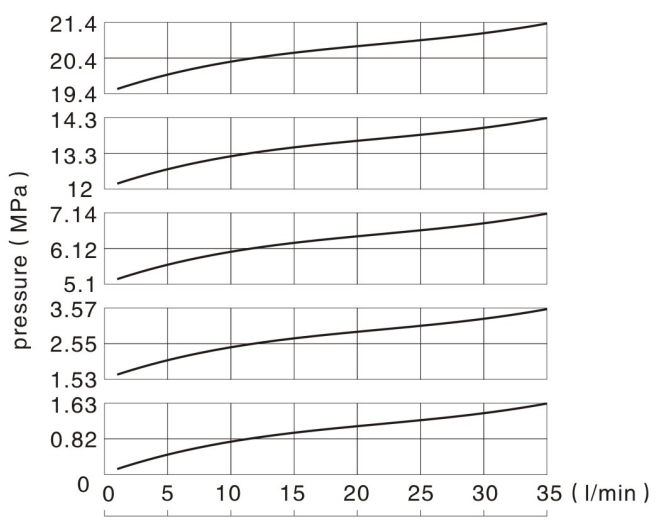
minimum adjusting pressure



characteristics curve of pressure drop

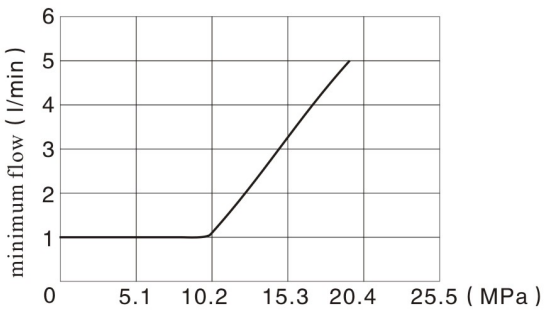


characteristics of flow-pressure

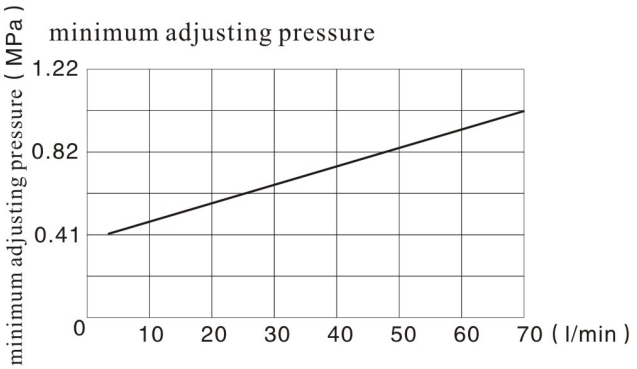


MRV–03

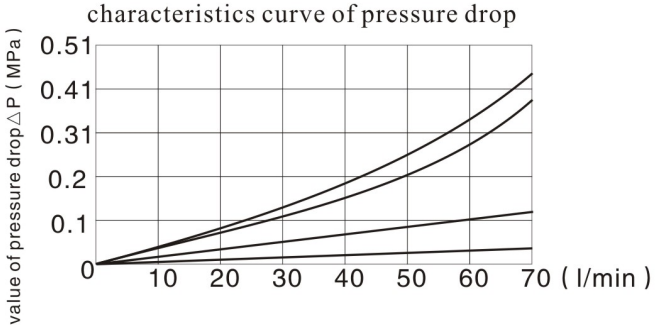
minimum flow



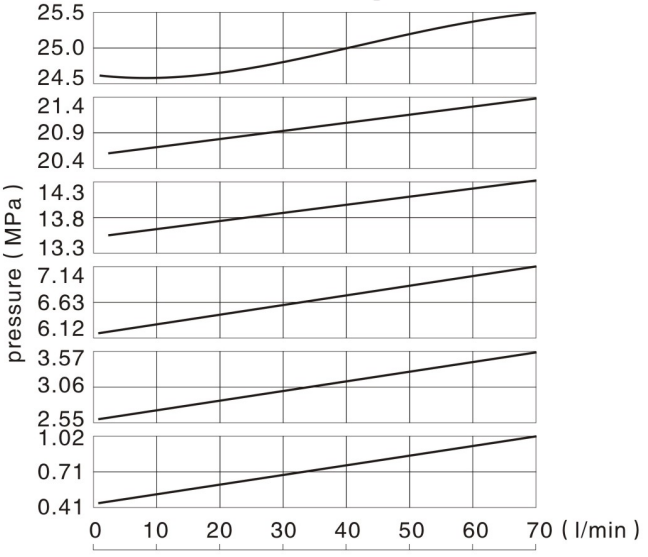
minimum adjusting pressure



characteristics curve of pressure drop

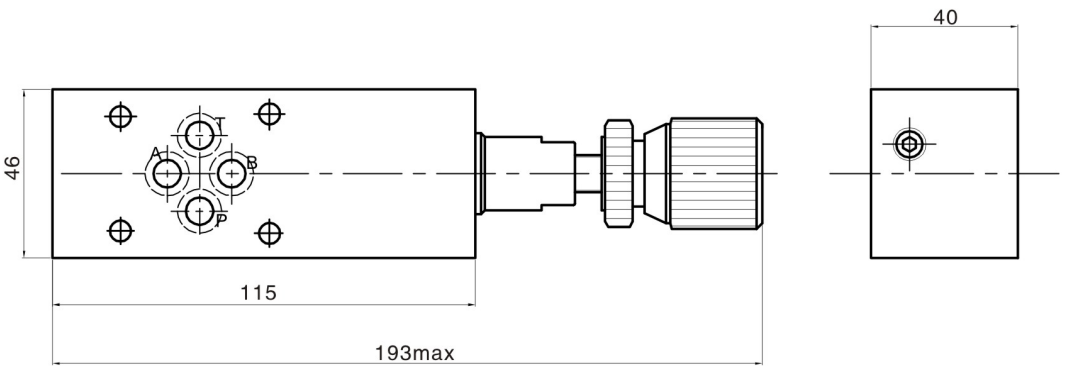


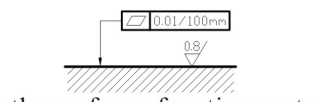
characteristics of flow-pressure



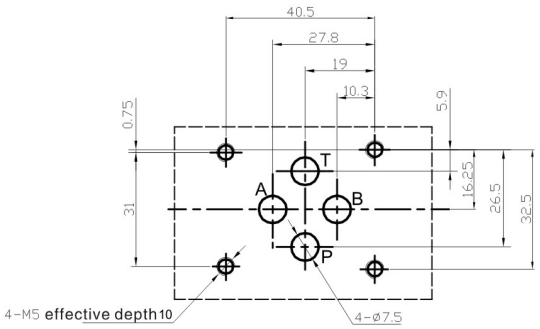
【installation dimension】

MRV–02

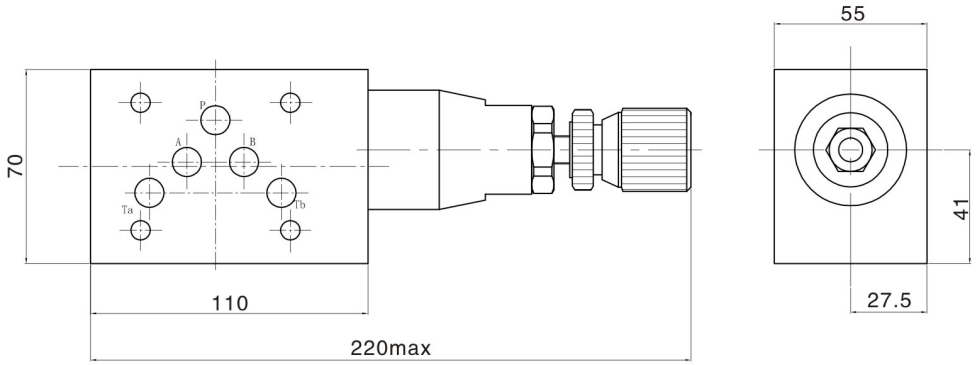


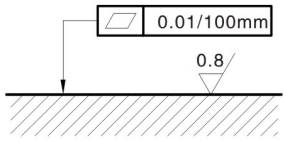


the surface of mating parts
request precision process

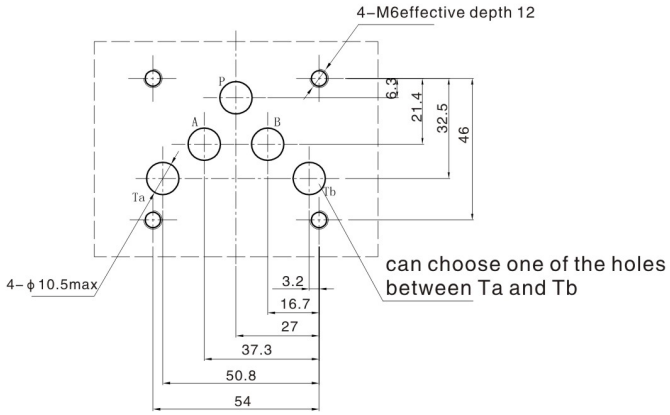


MRV–03





the surface of mating parts
request precision process



can choose one of the holes
between Ta and Tb

[Model Code]

MTCV	02	W	K		20

Design code

Control type
Blank： Output throttle
1： Input throttle

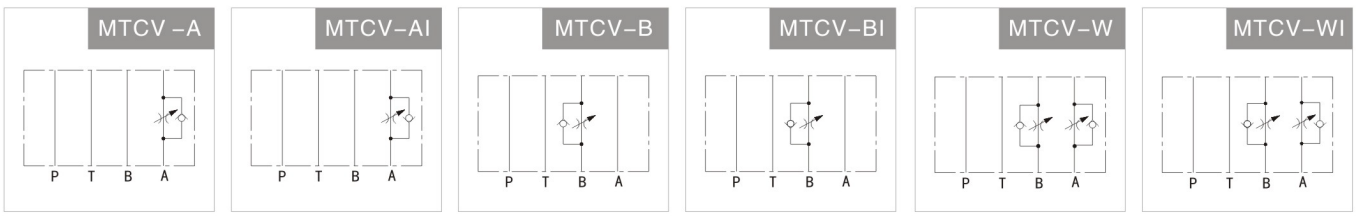
Adjustment rod type
Blank： No knob（customized）
K： With plastic knob（standard）

Function bore
A: bore A
B: bore B
W:bore A&B

Size：
02=NG6
03=NG10

Modular hydraulic operated check valves

[hydraulic symbol]

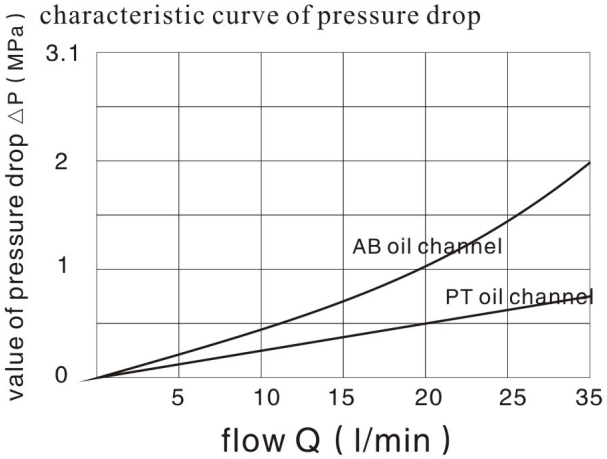


[Technical Data]

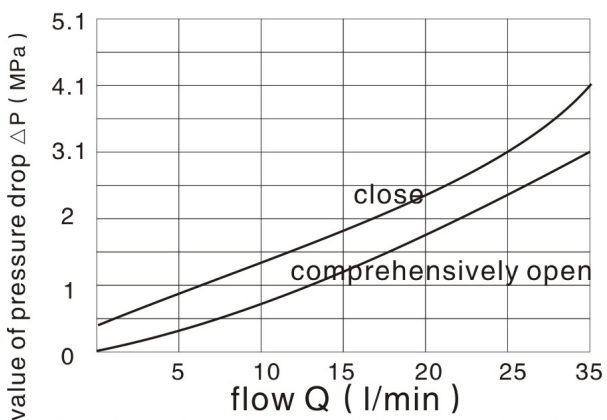
Model	The maximum pressure MPa	The maximum flow l/min	Weight kg
MTCV-02	21	35	1.3
MTCV-03		70	2.8

MTCV–02

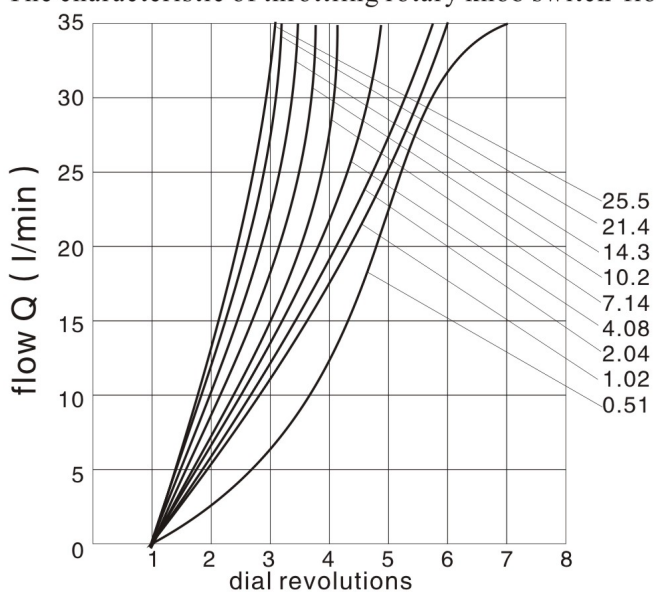
characteristic curve of pressure drop



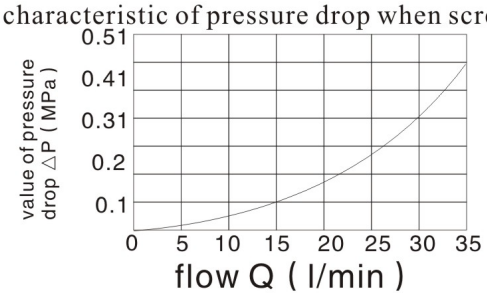
The characteristic of pressure drop when flow freely.



The characteristic of throttling rotary knob switch-flow

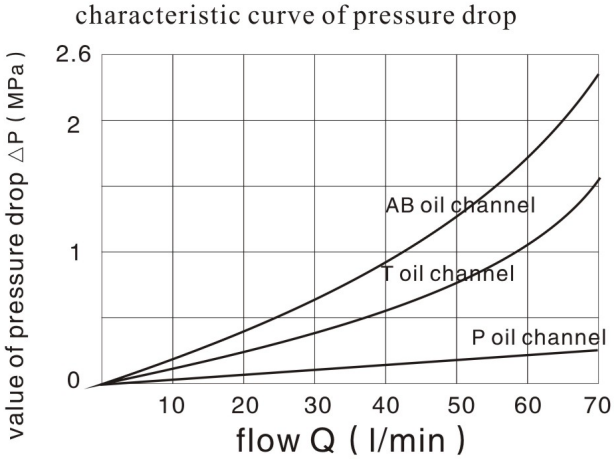


The characteristic of pressure drop when screw fully open

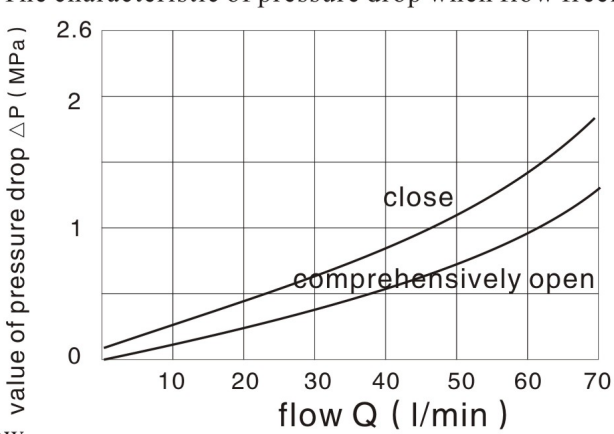


MTCV–03

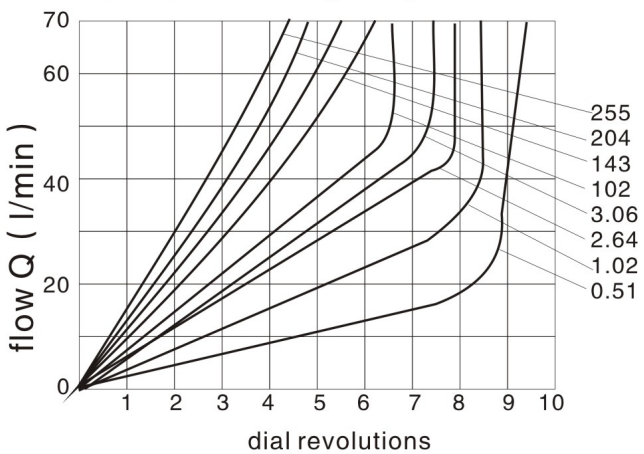
characteristic curve of pressure drop



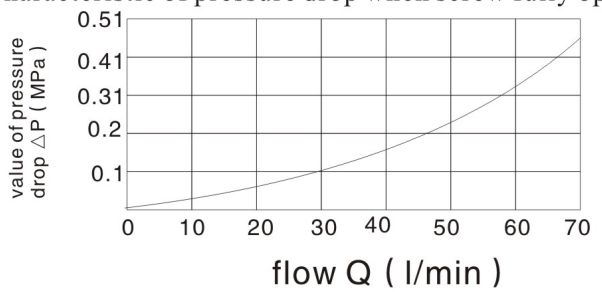
The characteristic of pressure drop when flow freely.



The characteristic of throttling rotary knob switch-flow

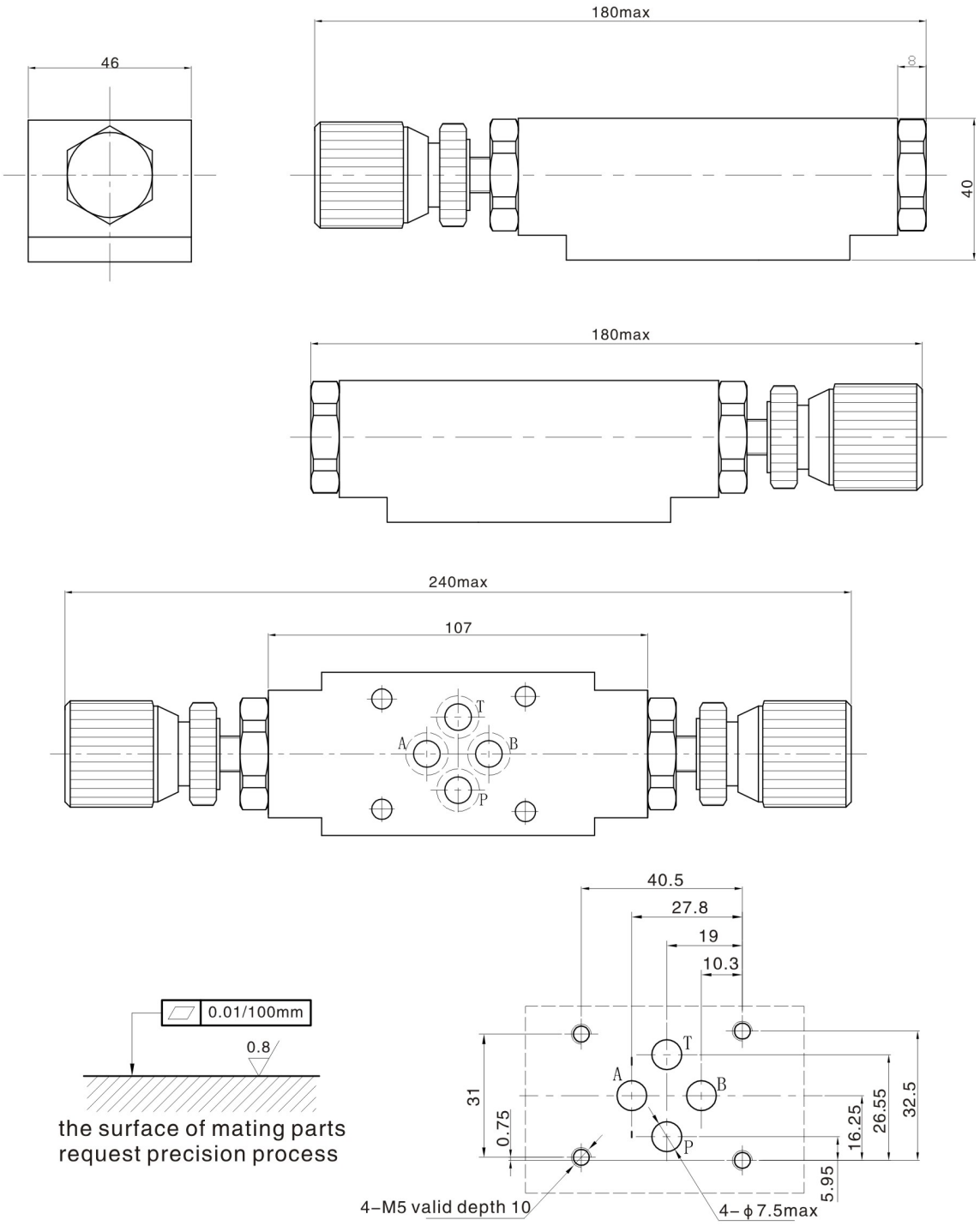


The characteristic of pressure drop when screw fully open

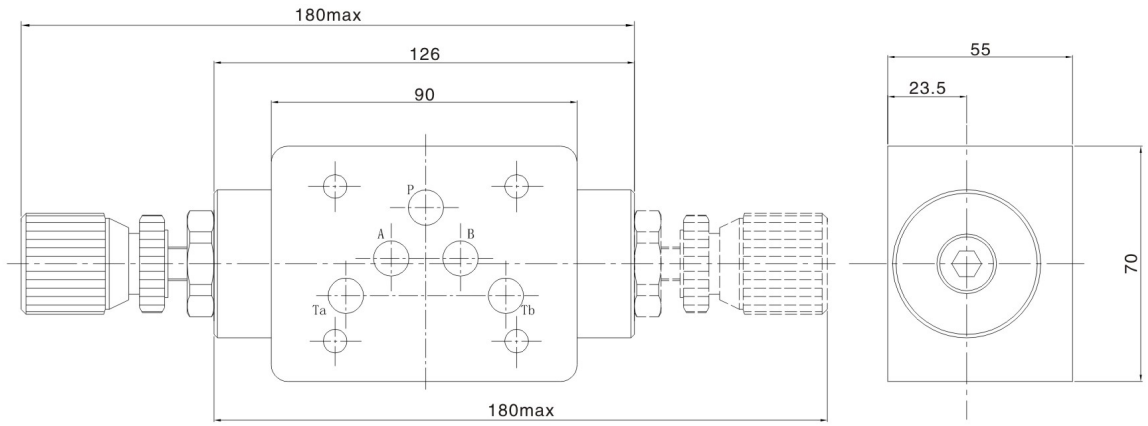


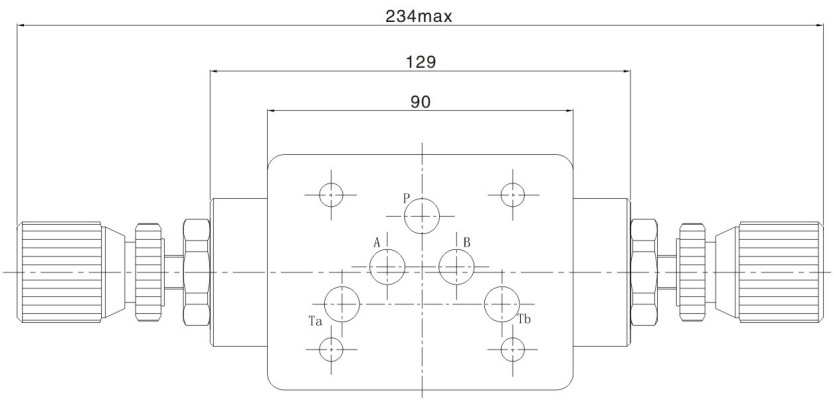
【installation dimension】

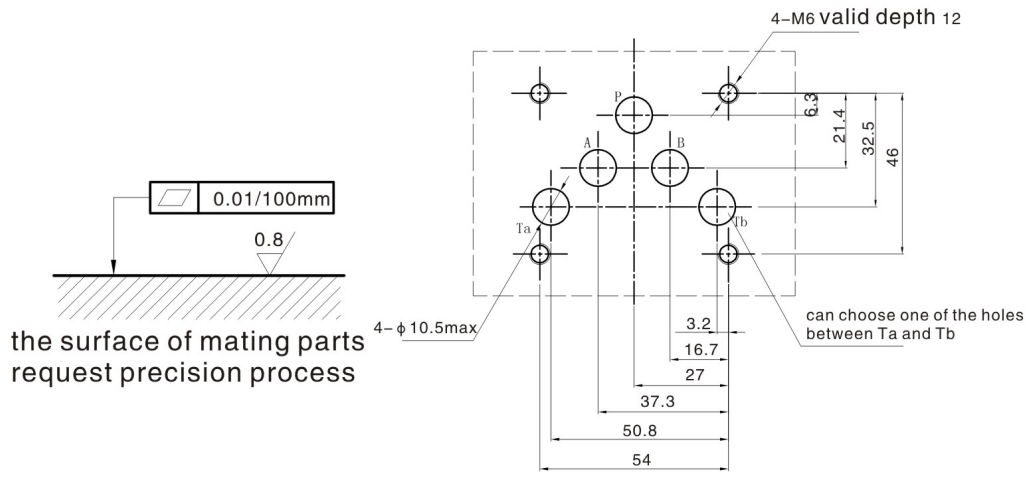
MTCV-02



MTCV-03


180max
126
90
55
23.5
70
P
A
B
Ta
Tb
180max


234max
129
90
P
A
B
Ta
Tb


4-M6 valid depth 12
6.3
21.4
32.5
46
P
A
B
Ta
Tb
0.01/100mm
0.8
the surface of mating parts
request precision process
4-ϕ10.5max
3.2
16.7
27
37.3
50.8
54
can choose one of the holes
between Ta and Tb